Geological Survey of Canada
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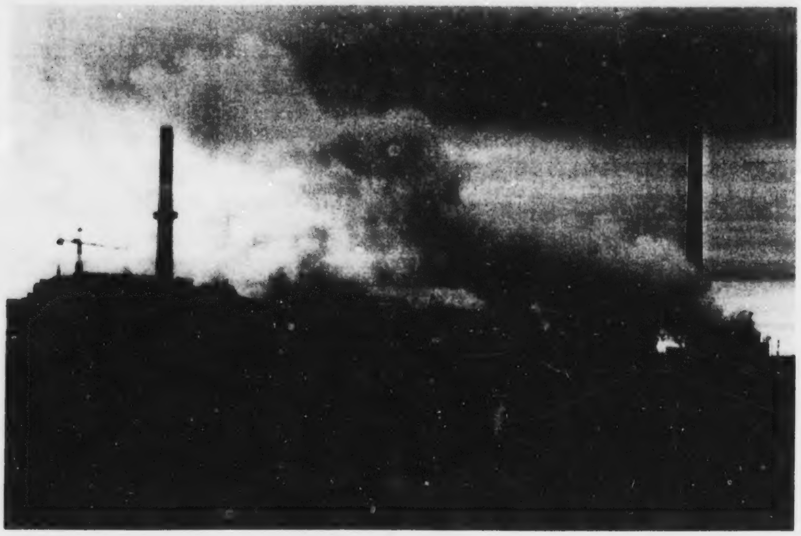
GEOCHEMICAL COMPOSITION OF HUMMOCK AND HOLLOW PEAT AND FEATHER MOSS IN THE VICINITY OF THE HORNE SMELTER, ROUYN-NORANDA, QUEBEC



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and

Kenneth M. Dion

2000

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GEOLOGICAL SURVEY OF CANADA
OPEN FILE 3882

Geochemical Composition of Hummock and Hollow Peat and Feather Moss in the Vicinity of the Horne Smelter, Rouyn-Noranda, Quebec

This Open File publication comprises:

1) A report of 37 pages with discussions of compositional data for peat, feather moss, and sediment data. Also included is a pocket item figure showing Cu, Pb, Zn, and Ni profiles, with depth, through peat hummock and hollow sequences in peatlands along three transects centered on the smelter.
2) Appendices including (i) information on peatland forms and vegetation (Appendix A); (ii) peatland site descriptions (Appendix B); (iii) field descriptions of hummock and hollow sequences (Appendix C); (iv) peat sample descriptions, including data for loss-on-ignition and bulk density measurements (Appendix D); (iv) geochemical data for peat, feather moss, and mineral sediment samples (Appendix E); (v) summary statistical data (Appendix F); (vi) geochemical data for duplicate samples (Appendix G); (vii) plots showing geochemical profiles, with depth, of peat in hummocks and hollows in 24 peatlands (Appendix H); and (vii) plots showing the distribution of selected elements in three peat horizons and feather moss in peatlands in dominant and non-dominant wind sectors.
3) Diskettes (3 ½ inch) of data for peat, feather moss, and mineral sediment samples (Appendices B, C, D, and E) accompanied by a data explanation file. Data are stored as Excel files (xls) and tab delimited ASCII (text) files.

Contribution to the Geological Survey of Canada's 1997-2002, Metals In The Environment [MITE] initiative.

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INTRODUCTION

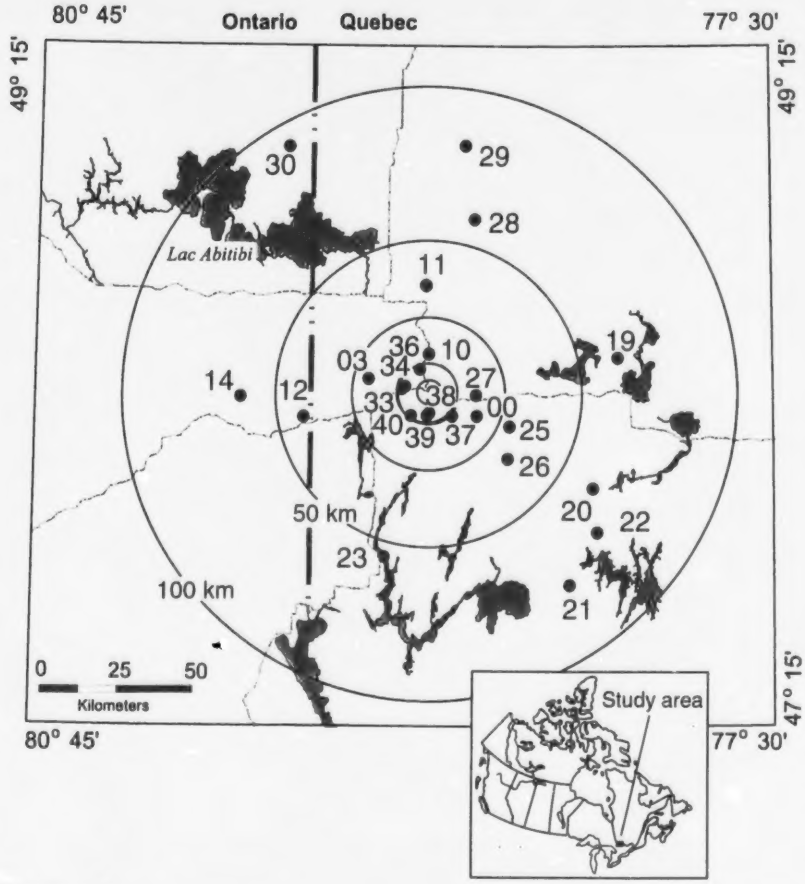
In 1997 Geological Survey of Canada initiated research on heavy metal concentrations in peatlands in the vicinity of the Horne smelter at Rouyn-Noranda, Quebec (Fig. 1). This work was carried out as part of the "Point Sources" Sub-programme in the Metals of the Environment (MITE) programme. The purpose of the Point Sources initiative was to determine and compare the physical and geochemical record of particulate smelter emissions in surficial media (till, soils, lake sediments, snow, lake waters, peat, and tree rings) and to evaluate the impact of anthropogenic loading on these natural systems.

It is commonly known that metal smelters are point sources of heavy-metal loading in the landscape with concentrations decreasing with distance from the smelter (Davis, 1983). Previous work has been undertaken near pollution point sources mapping metal distribution in foliage (Freedman and Hutchinson, 1980), humus and surface mineral soils (Hogan and Wotton, 1984; Henderson et al., 1998; McMartin et al., 1999), snow and rain (Lalonde, 1978), lichens and mosses (Ruhling and Tyler, 1968; Beckett et al., 1982, Ruhling and Steinnes, 1998) and peat. With respect to peat, there have been two general approaches for monitoring the atmospheric deposition of metals - the use of living vegetation and the use of profiles of metal concentrations with depth (Glooschenko et al, 1986). In Canada, the work focused on monitoring metal deposition in the vicinity of the major metal smelters (Glooschenko and Capoblanco, 1978, 1982; Glooschenko et al, 1981; Azzaria and Frechette, 1987; Zoltai, 1988a; Dumontet et al., 1990), while in the nordic countries it emphasized determining regional patterns of metal loading (Parkinen, 1981; Aaby and Jacobsen, 1979; Steinnes, 1997; Jensen, 1997).

The peatland project in Rouyn-Noranda was undertaken in two phases. The first phase, started in 1997, consisted of a sampling survey of 41 peatlands located within a 100-km radius of the smelter. At each peatland site, hummock peat samples were collected (Fig. 2) and, where possible, cores were collected through peat to mineral sediment in the adjacent flat part of the peatland, also called the hollow (Fig. 3). Peat samples from 24 of the 41 sites were analyzed for selected trace, minor, and major elements, their content of organic matter and bulk density (Fig. 1). Also at 15 of the 24 sites, surface feather moss (*Pleurozium schreberi*) (Fig. 4), a useful bioindicator of heavy metals, was collected and analyzed for the same suite of elements (Beckett et al., 1982; Rasmussen, 1994; Ruhling and Steinnes, 1998). The second phase, ongoing since 1999, has involved detailed work on the distribution and character of metals in hummock peat from four sites located 10,12, 38 and 130 km away from the smelter. In this report, geochemical and other data for peat, underlying mineral sediments, and feather moss from the 24 "first phase" peatlands are reported.

The potential of ombrotrophic (bog) peat for providing a historical record of smelter emissions and other types of industrial pollution has been considered for a number of reasons. Peat is composed almost entirely of organic materials that are known to preferentially fix and accumulate metals (Clymo, 1983) (Appendix A). The dominant peat-forming vegetation, *Sphagnum*, is rootless, grows from the apex, and has a chemical composition that inhibits decomposition (Fig. 4, Clymo and Hayward, 1982). The peatland becomes ombrotrophic when *Sphagnum* and other organic materials have accumulated to the point where they lie above the regional groundwater table and, hence, are nourished solely from atmospheric inputs (Clymo, 1983). Because of the nature of *Sphagnum* and its accumulation patterns, peat that forms in an ombrotrophic environment is, unlike other types of surficial materials, isolated from the influence of mineralized groundwaters and the mineral substrate. Also, the rates of vertical accumulation are high relative to most other surficial materials. As a result, the vertical peat sequence can be sub-divided into increments that represent shorter time periods for formation than is possible for most other types of surficial materials. Finally, plant remnants and pollen in the peat preserve a local and regional record of past plant communities from which the evolution of the peatland can be pieced together. Such interpretations help provide the framework against which physical and geochemical record changes can be evaluated. Additional information on *Sphagnum* and peatland forms is provided in Appendix A.

Peatland surfaces are commonly hummocky, with elevated mounds alternating with flatter, wetter hollows (Figs. 2 and 3). Peatland hummocks may range in height from a few centimeters up to a meter in height (Rochefort et al., 1990). Hummock species decay more slowly than hollow species, retain their physical structure longer, and, hence, allow for greater peat accumulation than those in hollows. (Johnson et al., 1990, Johnson and Damman, 1993; Ohlson


80° 45'
Ontario
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12
33
38
00
40
39
37
25
26
19
20
22
50 km
23
100 km
21
0
25
50
Kilometers
Study area

Figure 1.

Location of the 24 peatland study sites in the Rouyn-Noranda area, Quebec. The location of the city of Rouyn-Noranda is at the centre of the circle radii denoting distance from the smelter.

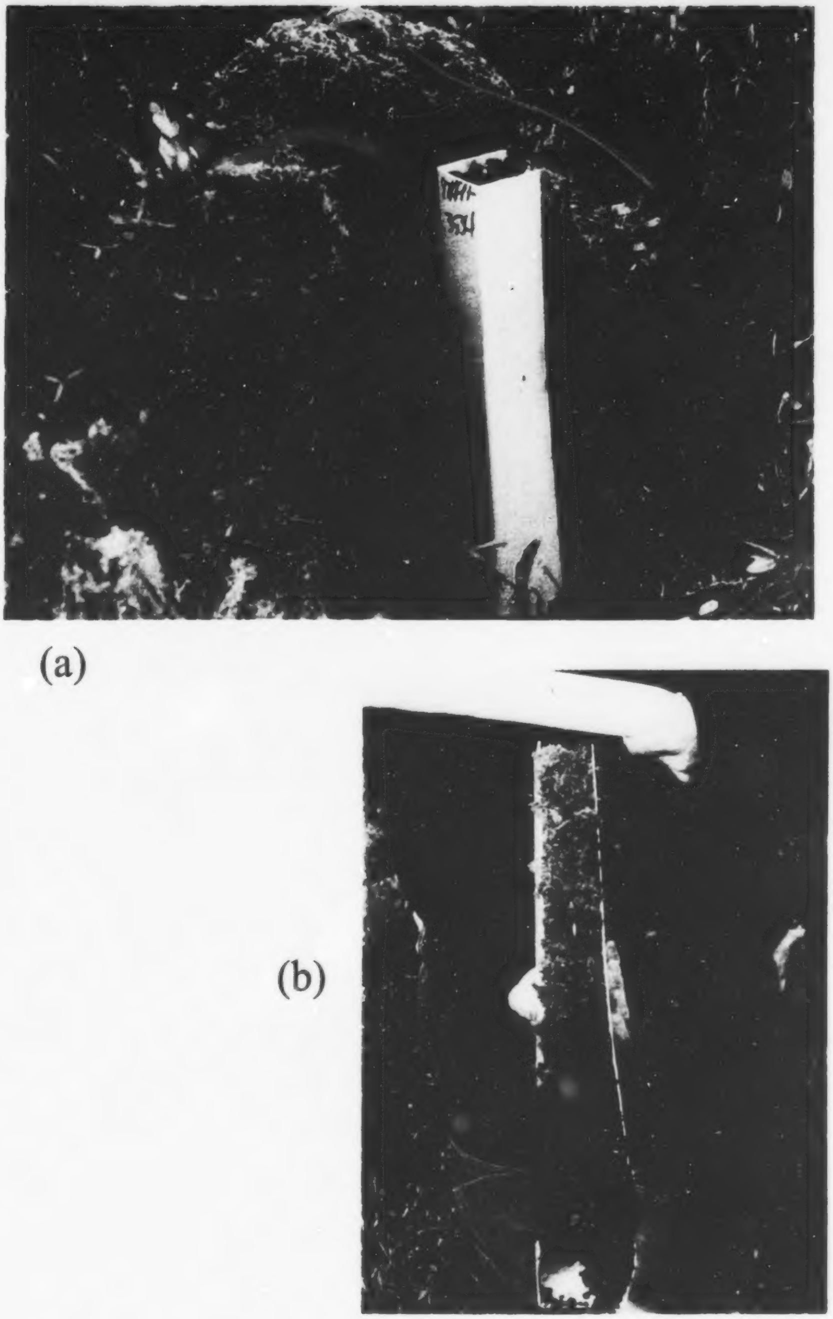


Figure 2.

(a) Sphagnum peat hummock from Rouyn-Noranda and (b) hummock peat sequence from top to bottom.

(a)

(b)

Figure 3.

Two Rouyn-Noranda area peatlands - (a) site 97KFA3500 and (b) site 97KFA3521. Also shown in (b) is the macaulay corer used to collect cores through the peat sequence to the underlying mineral sediment.

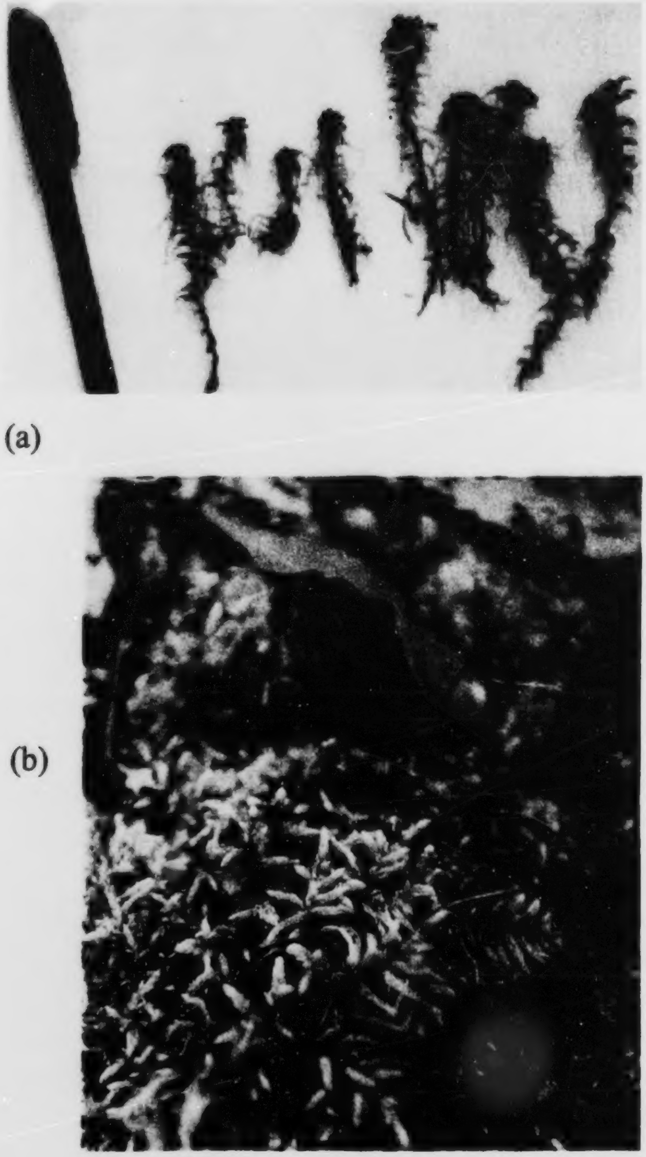


Figure 4.

Photo of (a) Sphagnum species and (b) Pleurozium scherberi (feather moss).

and Dahlberg, 1991) These differences and the slower hydrologic transmissivity in the hollows which results from them, accounts in part for the formation and long-term maintenance of hummocks and hollows for 100's to even 1000's of years (Nungasser, 1997).

SETTING

The Rouyn-Noranda area lies in the boreal ecoclimatic region (National Wetlands Working Group, 1988). It is underlain by rocks of the Abitibi greenstone belt that consist of Archean metasedimentary and metavolcanic units and associated intrusions (Stockwell et al., 1970; Fig. 5). Below an elevation of 300m, the bedrock is covered over large areas by glaciofluvial sands and gravels or by extensive clay plains that formed in Glacial Lake Barlow-Ojibway at the end of the last glaciation (Veillette, 1996). Above 300 m, till is the predominant surficial deposit. It forms a discontinuous veneer, 0-1.5 m thick, which mantles and reflects the topography of the underlying bedrock. Till deposits may be thicker (> 1.5 m) in depressions, along valley walls, and on the up- and down-ice sides of bedrock ridges. Peatlands have developed in poorly drained areas of the clay plains and in undrained depressions in the knobby shield terrane.

Development of the Rouyn-Noranda area progressed from the discovery of 4 mineral prospects in 1923, the opening of Horne mine in 1925, and the Horne smelter in 1927 (Roberts, 1956). Since the 1920's there has been extensive urban and industrial development, farming on the clay plain areas, and logging. At present the Horne smelter has 2 stacks, 161 and 130 m high, which are known to emit Ag, As, Cd, Cu, Hg, Pb, and Zn (Noranda Mines, Ltd., unpublished data). The prevailing winds are to the north, and south but winds to the northeast, east and south are also frequent (Noranda Mines, Ltd., unpublished data, Fig.6).

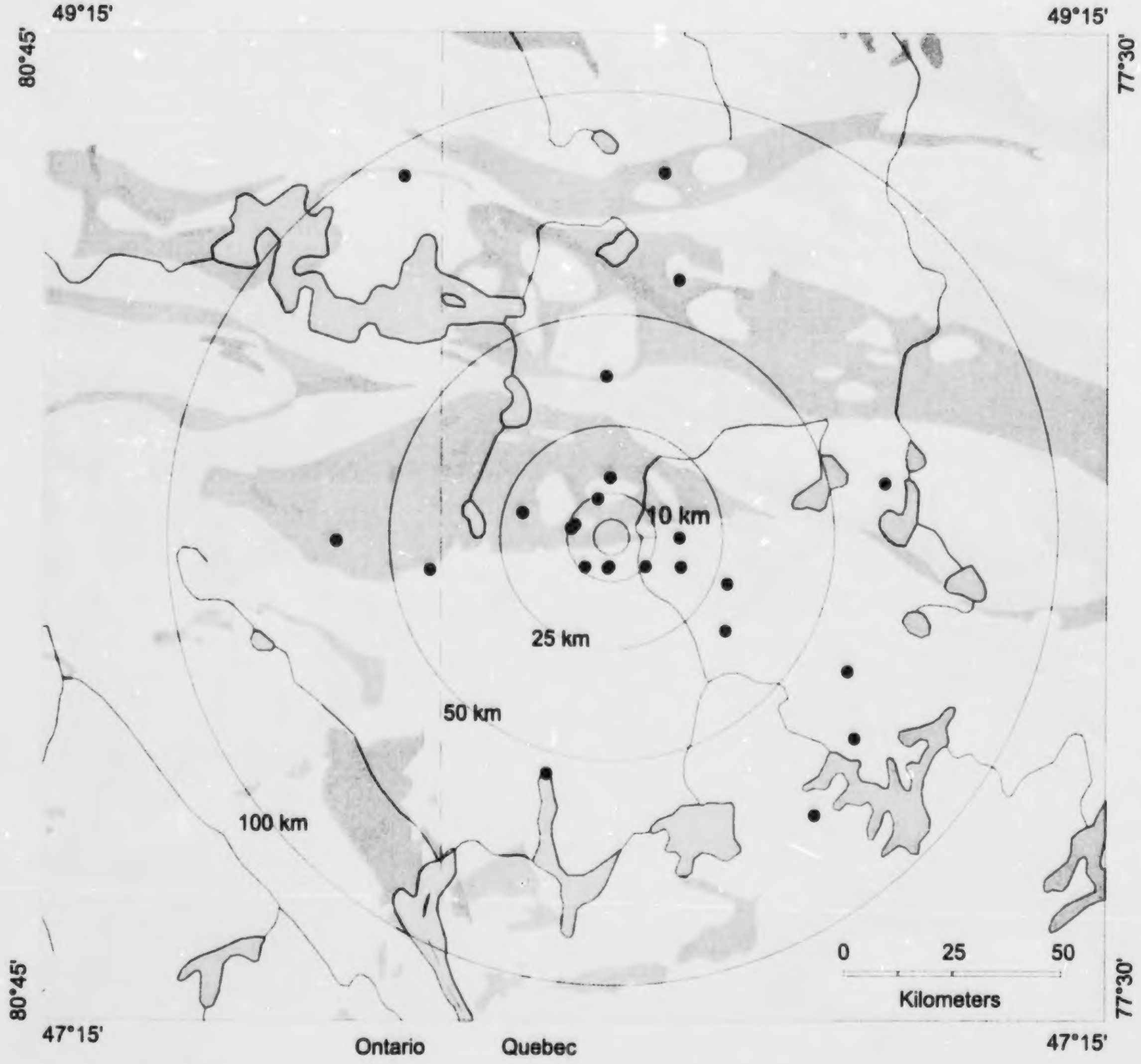
PREVIOUS WORK IN THE ROUYN-NORANDA REGION AND SURROUNDING AREAS IN ONTARIO

Glooschenko and Capoblanco (1978, 1982) sampled surface moss (0-10 cm) and peat cores (0-40 cm) from Kinoje Lake in the James Bay Lowlands, northern Ontario. They compared the metal concentrations in these materials to metal concentration in northern Ontario precipitation as determined by Kramer (1973) and concluded that, except for Zn, mosses and peat concentrated 1000 times the smelter-related metals on a dry weight basis.

Several smelter studies have been undertaken near Sudbury, Ontario, the site a Cu-Ni smelter Glooschenko et al. (1981) sampled some surface *Sphagnum* species in a series of 12 bogs on a transect which extended 300 km to the north from Sudbury. They determined that Ni, Cu, Pb, Cr concentrations increased from north to south but that Cd and Zn exhibited no clear trend. Gignac and Beckett (1986) determined that levels of Cu and Ni in 18 peatlands northeast of Sudbury decreased significantly with increasing distance from the smelter. They also noted that the distribution of the metals over the surfaces of the peatlands was even and concluded that aerial deposition was the only important source of these metals.

Previous studies of peatlands in the Rouyn-Noranda area were undertaken by Glooschenko et al. (1986) and Dumontet et al., (1990). Glooschenko and others sampled surface *Sphagnum* and peat profiles at depth in 10 bogs located within 70 km of the Horne Smelter. Some results from this study are discussed later in this report. Dumontet and others examined the distribution of metals in peat in peat-bearing swamps at 11 sites along transects oriented north-northeast and east-southeast out from the smelter. They noted a decrease in average pH values and ash contents for the whole peat profiles with increasing distance from the smelter. They found high concentrations of all metals in the 0 to 15 cm layer at sites near the smelter with Cu having the highest concentrations (5525 ppm), followed by Pb and Zn and limited concentrations of Cd and Ni. They suggested that there had been some migration of the metals down into the peat profiles and some accumulation in the sublayers at sites close to the smelter.

There have been at least two precipitation studies in the Rouyn-Noranda area. Lalonde (1978) measured metals levels in snow 2, 10, and 20 km from the smelter and in rain samples from Rouyn-Noranda and from LaSarre 65 km from the smelter. As part of this MITE program Kliza et al. (2000) determined the levels of smelter-related and other elements in snow collected in 1998 around the Horne smelter.


49°15'
49°15'
80°45'
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10 km
25 km
50 km
100 km
0
25
50
Kilometers
80°45'
77°30'
47°15'
Ontario
Quebec
47°15'

Bedrock Units

Surfical sediments or Paleozoic sediments
Gneiss; siliclastic and unclassified sediments
Felsic intrusives
Mafic to ultramafic intrusives
Mixed volcanics
Mafic volcanics

● Peatland sample site

Figure 5.

Bedrock geology of the Rouyn-Noranda area (after MERQ-OGS, 1983).

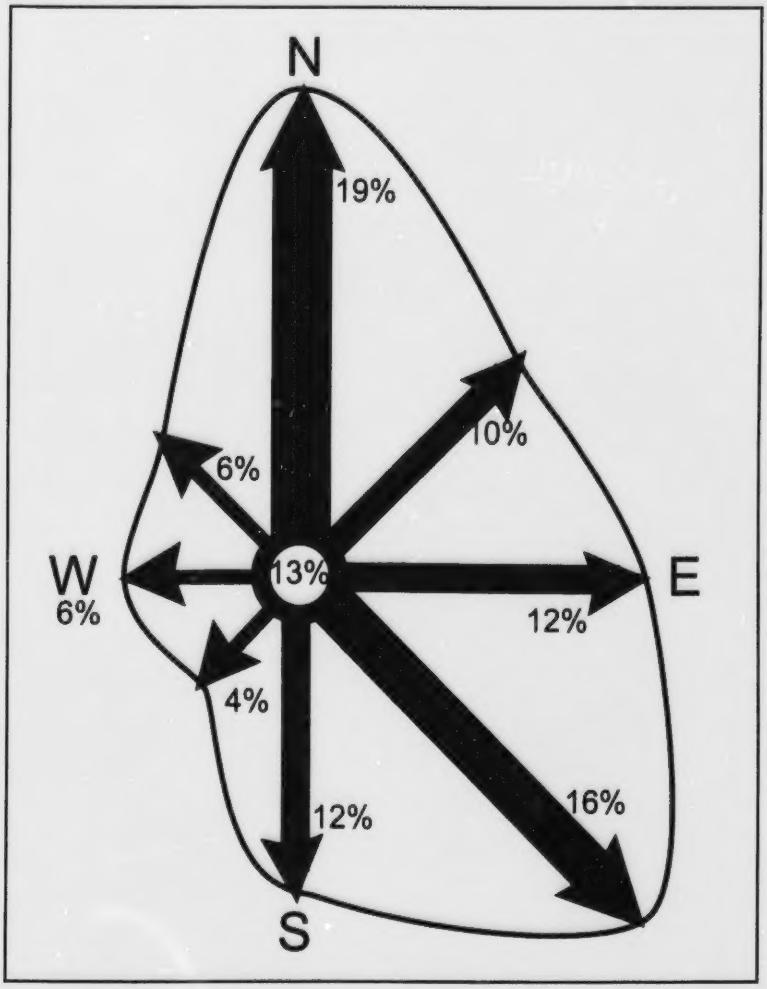

N
19%
10%
6%
W
6%
13%
E
12%
4%
12%
16%
S

Figure 6.

Wind rose diagram centered on Rouyn-Noranda, Quebec. The length and width of the arrow represent the frequency and strength of the wind, respectively.

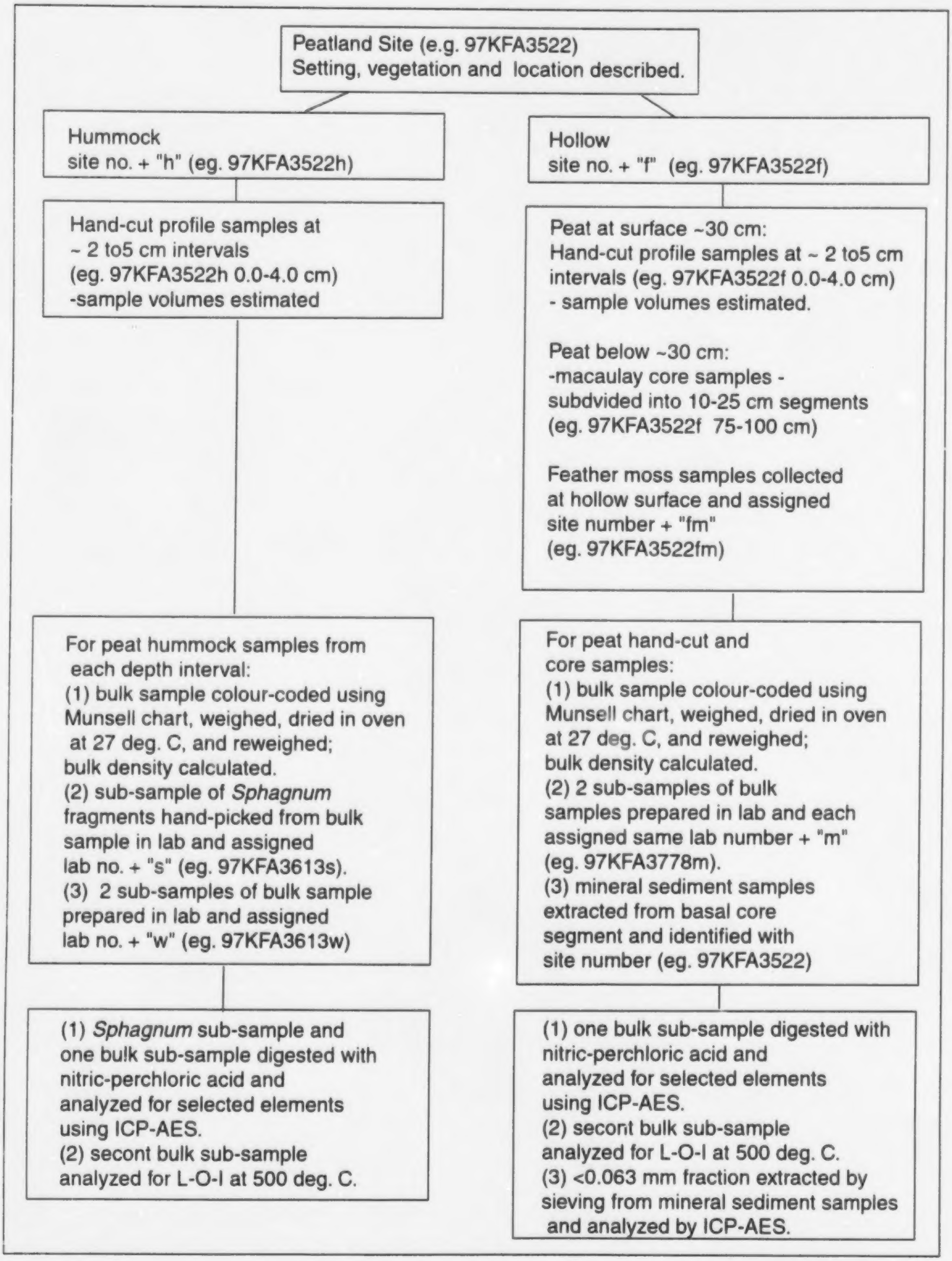
METHODOLOGY

A summary of the sampling procedures, processing, and analysis is presented in Figure 7.

Site selection - Sample sites were selected, based on peatland distribution, dominant wind directions, and road access. In the 1997 survey, samples were collected at 41 sites (97KFA3500 to 97KFA3540) but samples from only 24 of the 41 sites were analyzed (Fig. 1). The data for samples from these 24 sites form the basis of this report. Sites ranged from 7 to 92 km from the smelter (Appendix B). At each site, the peatland setting, vegetation, and location were described (Appendix B). The majority of sites were ombrotrophic (bog) or weakly minerotrophic peatlands (poor fens) (Zoltai, 1988b). The surface vegetation was predominantly *Sphagnum spp*. And ericaceous shrubs (*Kalmia angustifolia* (sheep laurel), *K. polifolia* (bog laurel), *Ledum groenlandicum* (Labrador tea), *Andromeda glaucophylla* (glaucous bog rosemary), *Chamaedaphne calyculata* (leather leaf).

Hummock sampling - At each site, the tallest available Sphagnum hummock covered with the fewest number of shrubby plants was selected for sampling. From top to bottom in the hummock, samples were collected at about 2 to 4 cm intervals with stainless steel clippers, and, where possible, the volume of each sample was estimated. Peat characteristics of the hummock sequence were described in the field (Appendix C). Measurements of pH were taken at or near the hummock base. In the data lists, the hummock sequences are identified with the peatland site number plus an "h" (e.g. 97KFA3500h).

Hollow sampling - At sites where there were peat accumulations of 30 cm or more in thickness in the flat part of the peatland (hollow) adjacent to the hummock, a second set of samples was collected. From the surface to a depth of approximately 30 cm, block samples were hand-cut and, where possible, sample volumes were estimated. Below 30 cm, peat was collected to mineral sediment using a 4.5 cm diameter stainless steel macaulay corer. The hollow sequences were described in the field (Appendix C). At the time of collection the hollow core was sub-sectioned into 10 to 50 cm long segments for analysis. Mineral sediments from the base of the core were also sampled. The hollow sequences are identified with the peatland site number plus an "f" (e.g. 97KFA3500f).



Peatland Site (e.g. 97KFA3522)
Setting, vegetation and location described.

Hummock
site no. + "h" (eg. 97KFA3522h)

Hand-cut profile samples at
~ 2 to5 cm intervals
(eg. 97KFA3522h 0.0-4.0 cm)
-sample volumes estimated

For peat hummock samples from each depth interval:
(1) bulk sample colour-coded using Munsell chart, weighed, dried in oven at 27 deg. C, and reweighed; bulk density calculated.
(2) sub-sample of *Sphagnum* fragments hand-picked from bulk sample in lab and assigned lab no. + "s" (eg. 97KFA3613s).
(3) 2 sub-samples of bulk sample prepared in lab and assigned lab no. + "w" (eg. 97KFA3613w)

(1) *Sphagnum* sub-sample and one bulk sub-sample digested with nitric-perchloric acid and analyzed for selected elements using ICP-AES.
(2) secont bulk sub-sample analyzed for L-O-I at 500 deg. C.

Hollow
site no. + "f" (eg. 97KFA3522f)

Peat at surface ~30 cm:
Hand-cut profile samples at ~ 2 to5 cm intervals (eg. 97KFA3522f 0.0-4.0 cm)
- sample volumes estimated.

Peat below ~30 cm:
-macaulay core samples - subdvided into 10-25 cm segments
(eg. 97KFA3522f 75-100 cm)

Feather moss samples collected at hollow surface and assigned site number + "fm"
(eg. 97KFA3522fm)

For peat hand-cut and core samples:
(1) bulk sample colour-coded using Munsell chart, weighed, dried in oven at 27 deg. C, and reweighed; bulk density calculated.
(2) 2 sub-samples of bulk samples prepared in lab and each assigned same lab number + "m" (eg. 97KFA3778m).
(3) mineral sediment samples extracted from basal core segment and identified with site number (eg. 97KFA3522)

(1) one bulk sub-sample digested with nitric-perchloric acid and analyzed for selected elements using ICP-AES.
(2) secont bulk sub-sample analyzed for L-O-I at 500 deg. C.
(3) <0.063 mm fraction extracted by sieving from mineral sediment samples and analyzed by ICP-AES.

Figure 7. *Summary description of sampling procedures and sample processing and analysis.*

Feather moss sampling - At 14 sites, feather moss (*Pleurozium schreberi*) (Fig. 5) was collected from the hollow, as close to the sample hummock as possible. Using methodology described by Rasumussen (1994), 2 to 4 cm long segments were clipped from the ends of the moss branches with stainless steel clippers.

Laboratory Processing - Peat hummock and hollow samples were assigned a laboratory number, coded using a Munsell soil colour chart (Munsell Color Company, 1971), weighed, and put in the oven to dry at 37degrees C. The dried samples were then reweighed and the moisture contents, based on both wet and dry weights, and bulk densities calculated (Appendix D).

From the poorly decomposed surface hummock samples, two and, where there was sufficient material, three splits (> 1gm) of the original dried sample were extracted. From one of these splits, Sphagnum fragments were hand-picked and the resulting sub-sample was identified with the laboratory number plus "s". The remaining one or two splits were both identified with the laboratory number plus "w". From the samples of more decomposed peat collected at greater depths in the peat hummock, two splits (>1 gm) of the original dried sample were extracted and both identified with the laboratory number plus "w". From the hollow samples, two splits of the original dried samples were extracted and both identified with the laboratory number plus "m". The mineral sediments samples were separated from the basal hollow core segment and identified with the site number. The feather moss samples were divided into two splits, identified with the site number plus "fm".

Samples analysis –. The <0.063 mm fractions of the mineral sediment samples were separated by sieving, treated with aqua regia, and analyzed for selected elements using ICP-AES methods (Appendix E). Peat samples were digested with nitric-perchloric acid digestion prior to ICP-AES analysis. Peat samples were also subjected to loss-on-ignition analysis at 500 degrees C (Appendix D). This analytical work on the peat and mineral sediment samples was undertaken at ALS Chemex Ltd., Vancouver.

One split of the feather moss samples was analyzed for selected elements using INAA methods (Appendix E).. The other was ashed and the residue treated with an aqua regia digestion, and analyzed using ICP-AES techniques methods. Analytical work on the feather moss samples was undertaken at Activation Laboratories, Ancaster, Ontario.

Statistical and Duplicate Sample Analysis - Where there were a sufficient number of analyses, basic statistical analysis of these geochemical data were undertaken (Appendix F). The quality of geochemical analyses for the peat, feather moss, and sediment samples was monitored using blind duplicates (Appendix G). For most samples, levels of Ag, As, Cd, Na and Sb are at or near detection level. Data, x-y plots, and best fit trend lines and equations, and correlation coefficients for the 19 first run and duplicate peat data show that there is good reproducibility for Al, Ba, Ca, Cd, Co, Cr, Cu, Fe, Mg, Mn, P, Pb, Sr, V and Zn. Reproducibility is poorer for As, K, Na, Ti and especially Sb. There were insufficient data to generate similar x-y plots for the feather moss and mineral sediment samples.

RESULTS

Physical Properties of Hummock and Hollow Peat

Hummocks in the Rouyn-Noranda area ranged in height from 35 to about 60 cm and were commonly oval or subrounded (Appendix B). The uppermost 10 cm of the hummock was composed predominantly of living or recently dead *Sphagnum*, whereas between 10 and 25 to 30 cm, the *Sphagnum* was light brown and poorly decomposed (Appendix C). Below 25 to 30 cm in the basal part of the hummock, the peat was brown to dark brown and consisted of moderately decomposed materials, including, in places, sedge peat. The hummock peat was most commonly light-textured being composed of *Sphagnum* plants that were almost entirely intact. The most common species identified from the hummock surface samples were *Sphagnum russowii*, *S. fuscum*, *S. capillifolium*, and *S. magellanicum* (D. Bastien, Botalys Ltd., pers. communication, Appendix B).

The commonly used Munsell soil colour chart classifies colour according to hue, value, and chroma. Most hummock peat samples had hues of 10yr or 7.5 yr, with values between 4 and 7 in the upper 30 cm and between 2 and 5 below 30 cm (Appendix D). Samples collected near the surface and central parts of the hummocks generally had chroma values between 4 and 6 but near the base they were commonly 2 to 3.

In the hollows, peat from the uppermost 10 to 15 cm of the sequence was generally undecomposed to moderately decomposed and dominated by *Sphagnum*. Below 10 to 15 cm, it was composed primarily of partially to well decomposed *Sphagnum* or sedge. In the hollow samples, the Munsell hues are 10yr, 7.5 yr, and 5 yr with values between 3 and 5 in samples from the uppermost 15 cm, and values between 2 and 3 for those below 15 cm. The chroma values were generally between 4 and 6 for samples from the uppermost 15 cm and 3 or less in samples from the lower part of the peat sequence.

While the moisture content of the hummock and hollow samples was generally similar, there are larger differences between the ash content and bulk density (Appendices D and F). The moisture content of 188 hummock samples ranged in value from 75 to 96% (mean- 88%) , based on wet weight, and from 309 to 2473% (mean - 790%), based on dry weight. For 115 hollow samples, the moisture content ranged from 47 to 96% (mean - 85%), based on wet weight. With the exception of one woody peat sample with 89%, the moisture content of the 115 hollow samples ranged from 219 to 2213% (mean - 702%), based on dry weight. The ash content of 188 hummock samples ranged from 0.6 to 45.0 % (mean - 2.3%) with 75% of the samples having less than 4.4%, whereas for 116 hollow samples it ranged from 1.5 to 60.7% (mean - 13.7%), with 75% of the samples having 17.0 % or less. The bulk density measurements for 138 hummock samples ranged from .01 to 0.11 g cm^{-3} (mean - .02) and for the 106 hollow samples from 0.01 to 0.42 (mean - 0.12). With a small number of exceptions, the bulk densities of the surface hummock samples were around 0.01 g cm^{-3}.

Geochemical Composition of Peat, Feather Moss, and the Underlying Sediment

Results of selected trace, minor, and major element analysis of hummock and hollow peat, feather moss, and the underlying mineral sediments and, where appropriate, summary statistical data are presented in Appendices E and F. The peat hummocks are composed primarily of *Sphagnum* but they also contain other mosses, and the leaves, twigs, and roots of plants and shrubs. When data for the hummock whole samples were compared to the data for the *Sphagnum* fragments, only, from the same sample, the differences were generally small for most elements (Appendix G). There was a strong linear relationship for Al, Ba, Ca, Cu, Fe, K, Cd, Mn, Pb, Sr, V, and Zn, with R^2 values greater or equal to 0.80, whereas the relationships were weak for Cr ($R^2 = 0.46$) and Ni ($R^2=0.32$).

The geochemical signature of peat in the vicinity of a metal smelter is known to be affected by the emissions of metal-bearing particulates from the smelter stacks (Glooschenko, 1986). To examine variation in peat composition in the Rouyn-Noranda area, first, geochemical profiles for peat hummocks and hollows for the 24 peatland sites were generated (Appendix H) and, secondly, profiles for selected elements were grouped into three broad transects centred on the smelter (west to east, northeast to southeast, and smelter to north) and plotted (Fig. 8). Copper, Zn, Pb, Cd, Ag, As, and Sb concentrations are very high in some hummock and hollow peat samples within 12 km of the smelter (500 ppm Cu and Pb, 250 ppm Zn, 1.5 Ag, 20 ppm Cd, 25 ppm As, and 14 ppm Sb) (Appendices E and H). Concentrations of these elements decrease with increasing distance from the smelter such that background concentrations (less than 10 ppm Cu, 0.5 ppm Pb, 30 ppm Zn, 0.1 Cd, <2 ppm As, and <2 ppm Sb) occur about 20 km from the smelter. Enrichment of these elements in peat near the smelter is considered to be smelter-related because these elements are emitted from the smelter.

In peat hummocks within 12 km of the smelter, levels of smelter-related elements are relatively low in the uppermost 20 cm of the sequence, increase about 5 fold between depths of 20 and 45 cm, and decrease again below 45 cm. In contrast, in peat hollows, Cu, Pb, Zn, Cd, Ag, and As concentrations are consistently high in the uppermost 20 cm, and drop to near background levels below this depth. In places, however, Cu, Zn, and As are enriched in basal peat from the hollows, though to a much lesser extent than in the surface peat of cores collected near the smelter. For hummock and hollow peat, the Cu, Zn, Pb, Cd, Ag, As, and Sb composition is affected most strongly by the smelter emissions.

The element content of feather moss samples collected at 14 of the peatland sites are listed in Appendix E and data for smelter-related and selected other elements are plotted against distance from the smelter in Appendix H. Levels within 12 km of the smelter are 10 fold higher for Cu, 50 to 100 fold higher for Pb, about 2 fold higher for Zn, at least 3 fold higher for Cd, 5 to 10 fold for As, and 5 to

10 fold for Sb. Similar to peat, there is a negative power relationship between the log of smelter elements concentrations and the log of distance from the smelter.

In the Rouyn-Noranda area, the prevailing winds are to the southeast and north, but there are also frequent winds to the northeast, east, and south (Fig. 6). To examine in more detail the effects of wind patterns on smelter-related element concentrations in peat and feather moss, geochemical data from selected peat horizons (hummock surface, hummock at 30 cm, and hollow surface) and feather moss were divided into two groups and plotted against distance from the smelter (Appendix H). One group consisted of sites located in the north, northeast, east, southeast, and south (the most frequent wind) sectors, and the other for data from the northwest, west, and southwest (less frequent wind) sectors. Data for samples that encompassed the 30cm depth interval in the hummock were selected for plotting because, as described above, the highest metal levels in hummocks lie between depths of 20 and 45 cm and most hummocks were at least 30 cm high. When data from the different peat horizons and feather moss were plotted, an inverse relationship was noted for most elements for both groups of data such that the log concentration of the element decreases with the log of the distance from the smelter. Also, within 20 km of the smelter, element levels in the "most frequent wind" sectors were higher than those in the "less frequent wind" sectors. With a few exceptions, the relationship is strong ($R^2 > 0.70$ and in many cases, $R^2 > 0.80$). For unknown reasons, the relationship is poor for Zn for feather moss and weaker for Ag in the surface hollow samples.

Within 10 km of the smelter, there are high levels of Al (up to 1.00%), in places, near the base of the peat hummocks, whereas levels are generally low (< 0.05%) beyond 10 km. Aluminium concentrations tend to be low at the hollow surface but at some sites they systematically increase then decrease with increasing depth, or increase near the base of the sequence. The distribution pattern of Ba in the hummock is variable. In sequences collected from some hollows, Ba levels increase and decrease with increasing depth, while in others they increase from the surface towards the base. At most sites, the distribution patterns of Ca, Mg, and Sr are similar, especially for Ca and Mg. The contents of Ca and Mg are generally low in the hummocks (<0.04%) whereas, in the hollow sequences, they are low near the surface but increase to 1.00% or more Ca and 0.10 to 0.20% Mg near the base. There are low levels of Co (<5 ppm), Cr (<10 ppm) and Ni (< 10 ppm) in the hummocks but Co and Ni tend to increase slightly near the hummock base. Near the base of the hollow sequence, concentrations of Co, Cr, and Ni are generally higher than they are near the hollow surface. At most sites, Fe tends to increase slightly near the base of the hummock. The highest levels of Fe in the hummock peat (>1.0%) occur within 10 km of the smelter. In the lower parts of the hollow sequences, there are high levels of Fe, though at some sites, peat at the hollow surface is slightly enriched.

Potassium concentrations are markedly high (approximately 0.50 to 1.0%) in peat in the uppermost part of the hummock and hollow sequence, whereas, near the peatland base, they are commonly less than 0.10%. At most but not all sites, there are notably higher levels of Mn (>500 ppm) at the surface in the upper part of the hummock. There are also high concentrations of Mn (200-500 ppm) at the surface of some hollow sequences but the pattern is not as pronounced. At some sites (e.g. 97KFA3522, 3533, and 3537), the Mo content is high in the basal part of the hollow sequence, whereas in the upper part of the hollow and in the hummock, levels are 2 ppm or less. The distribution pattern of Na varies in the hummock sequences from site to site. At a number of sites, there are markedly high concentrations of Na (200-300 ppm) in the basal compared to the upper part of the hollow sequences. The distribution patterns of P, Ti, and V vary from site to site for both hummocks and hollows, although in individual hummocks and hollows Ti and V distributions are similar.

The geochemical data for the underlying sediments is presented in Appendix E. Near the smelter, levels of the smelter-related elements in the glaciolacustrine sediments or till underlying the peat sequence are low compared to their levels in some hummock samples and in surface hollow samples.

DISCUSSION AND SUMMARY

There are high levels of smelter-related elements (Cu, Pb, Zn, Ag, Cd, and Sb) in some peat samples from hummock and hollow sequences and in feather moss from peatlands located within 20 km of the smelter. In hummocks near the smelter, levels are relatively low near the surface but increase markedly and systematically between depths of 20 and 45 cm. In the tallest hummocks, they may decrease again below 45 cm (e.g. 97KFA 3540). In contrast, levels of the same elements are consistently high in the uppermost 20 cm of the hollow sequence.

The differences between the distribution patterns of smelter-related elements in the hummocks and in the hollow surfaces are thought to reflect the higher vertical accumulation rates that characterize hummock compared to hollow peat. Ohlson and Dahlberg (1991) calculated vertical accumulation rates in hummocks and hollows in 11 Swedish peatlands by measuring, on small pine trees growing on hummocks and hollows, the vertical distance between the stem base and the peat surface and counting the tree rings at these two points on the excavated tree. At the 8 sites with *Sphagnum fuscum* hummocks, they determined that the average depth at which hummock peat was 25 years old, ranged between 15 and 35 cm. Peat in the hummocks that was 25-100 years old occurred at depths that were twice as large at those found in the hollow.

In the Rouyn-Noranda area, peat in the hummocks is loose, light-textured, poorly decomposed and has low bulk density (around 0.01 g cm^{-3}). It is possible to see fairly intact *Sphagnum* plants in near-vertical growth positions for up to several 10's of cm down from the top of the sequence. In contrast, peat from the hollow surface is more decomposed and has a bulk density commonly 2 or more times higher than the hummock. Although no near-surface peat from the hollow from this study has been dated, it is likely that peat in the uppermost 10's of centimeters in the hollow formed over a much longer time period than peat in the uppermost 10's of centimeters in the hummock. As a result, when sampling near-surface peat from the hollow, it is difficult or impossible to divide the sequence into small enough vertical segments to see, within the resulting geochemical profile, small-scale variations in peat composition over the last 100 years. The differences in metal distribution patterns between profiles from hummocks and hollows reflect the particular peatland setting. Understanding the setting is important for interpreting the anthropogenic metal record.

Variations in the contents of smelter-related elements over the depth of the hummock likely reflect most strongly the changing patterns of smelter particulate emissions over time, although some may reflect some post-depositional remobilization of these elements. As shown previously, there are low levels of smelter-related metals at the base of the tallest hummocks, high levels between depths of 20 and 45 cm, and relatively low levels near the hummock surface. Data on smelter metal emissions indicate that levels increased steadily from the opening of the smelter to the early 1940's, were low over the war years, and increased again steadily from 1950 until they peaked in the mid-1960's (Noranda Mines Ltd., unpublished data). With the introduction of new smelting equipment and improved procedures for recycling smelting by-products, the quantities of metal-bearing emissions dropped markedly to the late 1980's and have been low since 1990. For example, since 1967, emissions of Cu decreased from around 3000 metric tonnes to less than 300 in 1989, and have been below 80 metric tonnes since 1990.

Results from the earlier peat sampling work undertaken around Rouyn-Noranda (Glooschenko et al., 1986) provide further evidence for linking the patterns of hummock metal distributions and smelter emissions. In 1982, Glooschenko and others sampled the surface 5 cm of *Sphagnum fuscum* hummocks in peatlands 9 to 69 km from the Horne smelter, with the site locations being based on the most frequent wind directions (Fig. 9; Table 1). Although samples from the 1982 were treated with a different mixture of chemicals prior to analysis for Cu, Pb, Zn, and Fe, the digestions used for the two studies were both strongly oxidizing, and, hence, results should be comparable. In the four cases where sample sites from the 1982 study lie in close proximity to sites from the present study, element levels are consistently higher in the 1982 samples (Fig. 9; Table 1). Also, when hummock surface data from the two studies were plotted against the distance from the smelter, results show that, within 20 km of the smelter, the concentrations of Cu, Pb, Zn, and were markedly higher in the 1982 compared to the 1997 samples (Fig. 10).

In places, relatively high levels of Ca, Mg, Fe, and other elements in the lower part of the hollow peat likely reflect the influence of minerotrophic ground or surface waters in the early stages of peatland development (Clymo, 1983).

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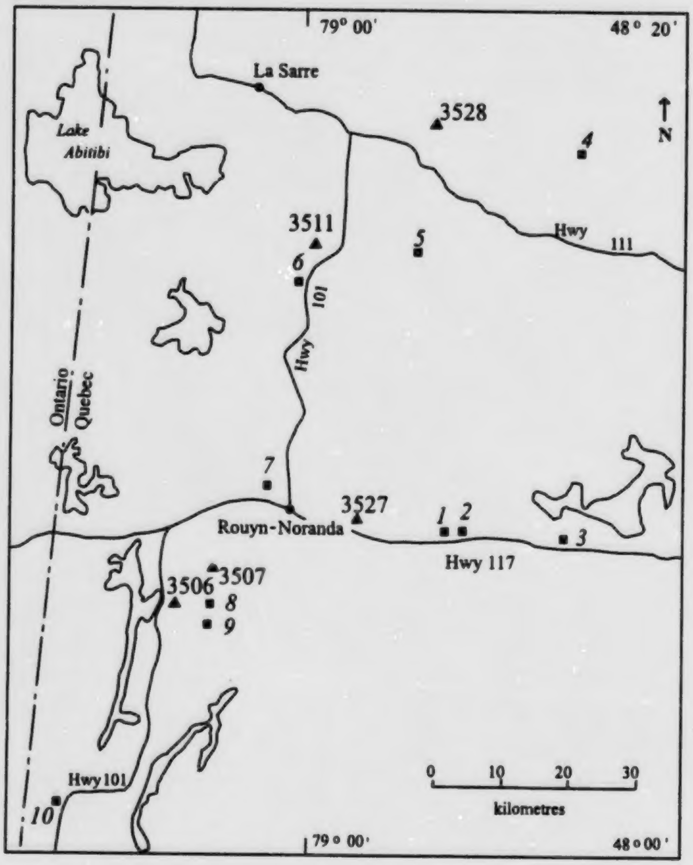
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Figure 9.

Map showing the 10 peatland study sites from Glooshenko et al. (1986) (black squares). Also shown are four sites from the present study (black triangles) that are located in close proximity to sites from the earlier study. For comparative purposes, geochemical data only were generated for the surface hummock samples for 2 sites - 97KFA3506 and 97KFA3507 - not otherwise included in this data release.

Table 1. Earlier elemental analyses of surface *Sphagnum* hummock samples.

Site	Distance from Smelter (km)	Sector	Fe ppm	Cu ppm	Pb ppm	Zn ppm
Data for surface *Sphagnum fuscum* samples collected in 1982 (Glooschenko et al., 1986)						
1	21	ese	1356	138	381	148
2	22	ese	988	104	198	109
3	30	ese	692	40	65	50
4	69	nw	2784	10	41	41
5	49	nnw	2750	14	37	37
6	36	n	915	25	86	61
7	4	w	no *Sphagnum*			
8	19	ssw	1549	51	157	106
9	20	ssw	1289	39	133	98
10	63	ssw	679	18	20	25
Data for surface *Sphagnum spp.* samples collected in 1997 (this study), where sample sites were located in close proximity to peatland sites from Glooschenko et al. (1986)						
3506	25	close to Site #9	50	5	5	21
3507	19	close to Site #8	450	12	17	20
3511	33	close to Site #6	200	12	13	23
3528	58	close to Site #4	850	9	7	23

Note: Locations of the above sites from both studies are shown in Figure 2.

Methodology:
Glooschenko et al. (1986):
Top 0-5 cm of moss from 30 sites in each peatland homogenized to one sample.
Analysis by atomic absorption spectrometry after digestion of 2 : 1 HNO_3-H_2SO_4 and H_2O_2.

This Study:
Surface hummock sample at each site digested with nitric-perchloric acid.
Analysis by ICP-AES.

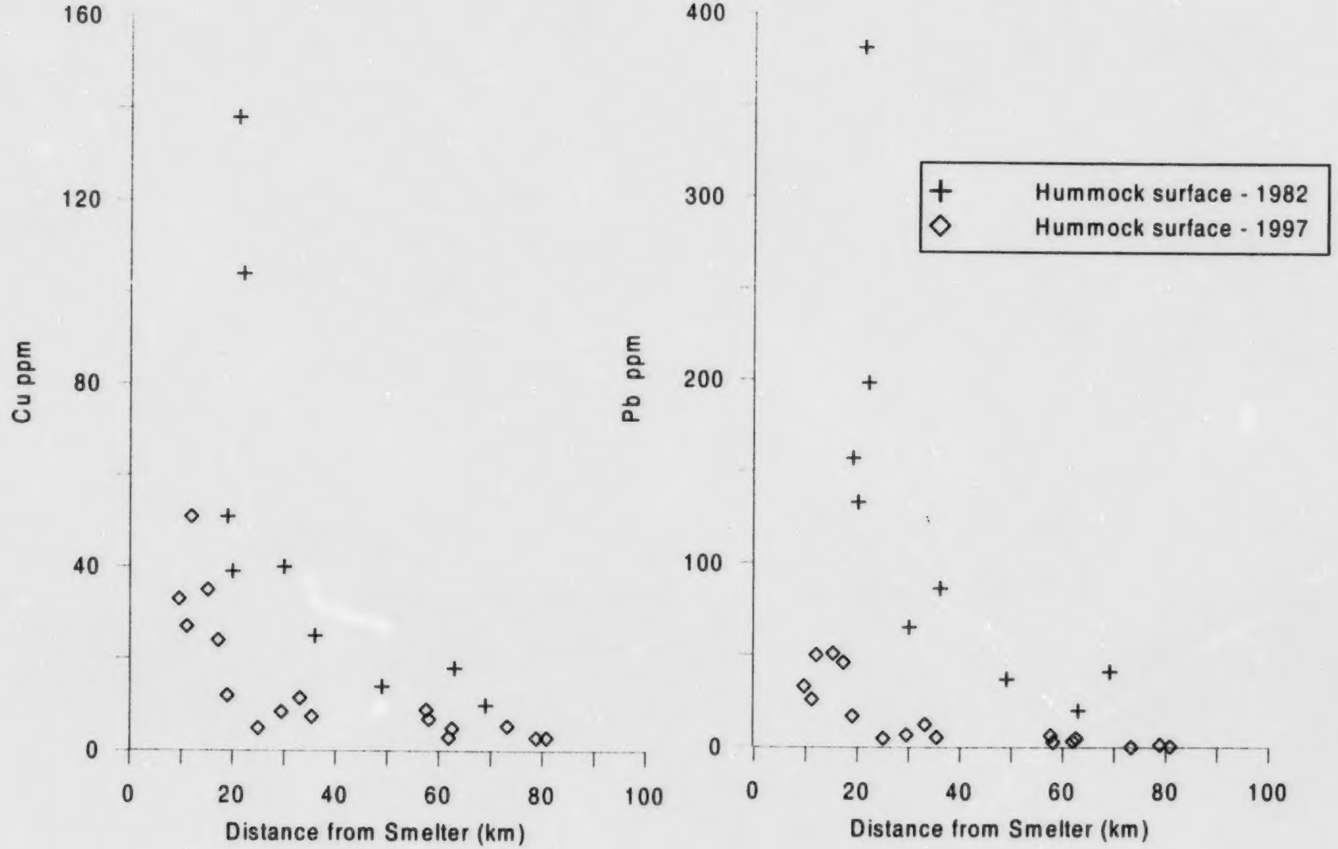

Figure 10.

Distribution of Cu, Pb, Zn and Fe in surface Sphagnum hummock samples from the north, northeast, east, southeast and south sectors of the study area. Samples were collected in 1982 by Glooschenko et al. (1986) (n=9) (Table 1) and in 1997 (this study) (n=17). Two sites - 97KFA 3506 and 3507 - are included for which no other data are available (Fig. 7; Table 1).

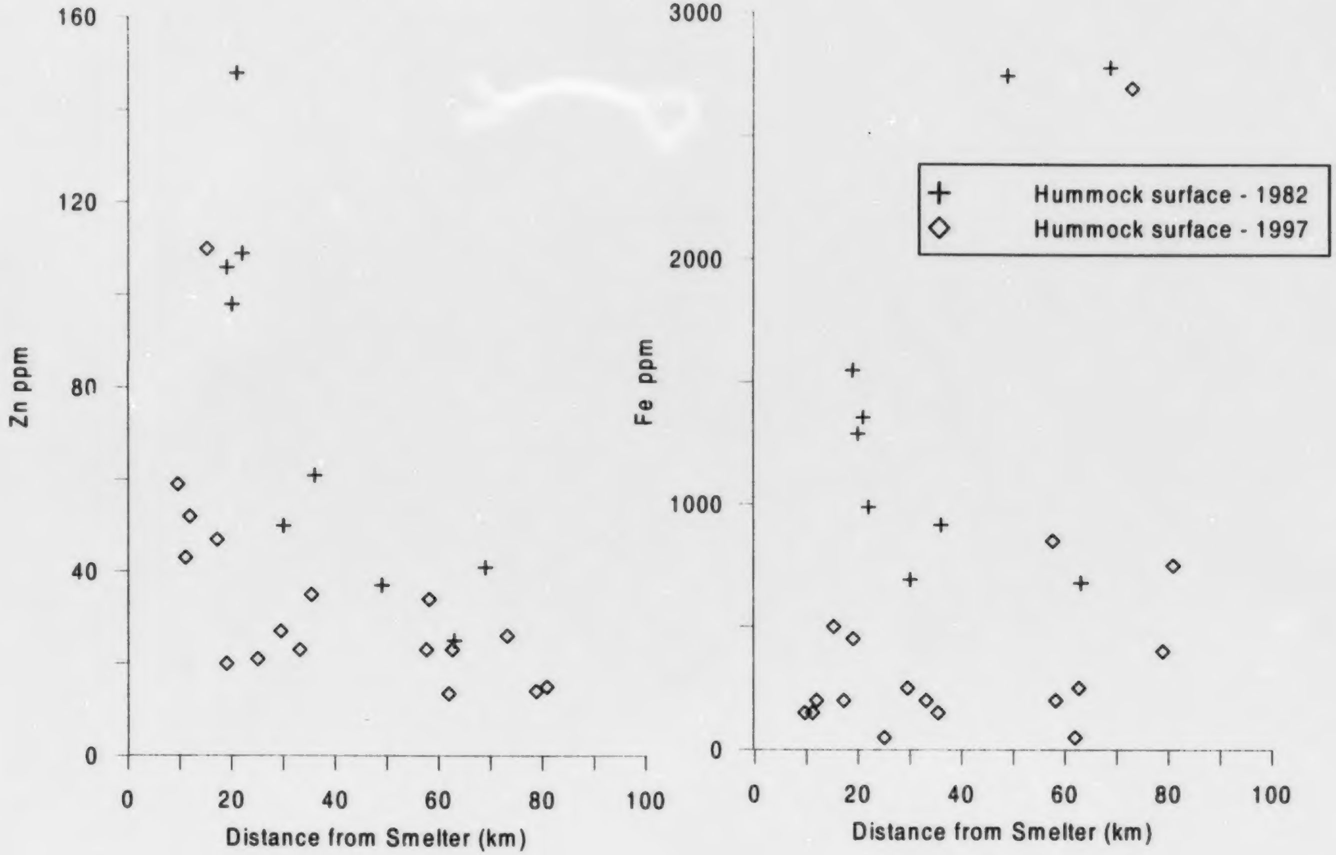

***Figure 10** (continued).*

Distribution of Cu, Pb, Zn and Fe in surface Sphagnum hummock samples from the north, northeast, east, southeast and south sectors of the study area. Includes samples collected in 1982 by Glooschenko et al. (1986) (n=9) (Table 1) and samples from this study collected in 1997 (n=17). There are data for two sites - 97KFA 3506 and 3507 - for which no other data are available (Fig. 7; Table 1).

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APPENDIX A

ADDITIONAL INFORMATION ON PEATLAND FORMS AND VEGETATION

Peatland Forms and Development

Peatlands are wetlands that have a massive deposit of partially decomposed plant remains that is 40 cm or more in thickness and is covered with living vegetation (Zoltai, 1988b). The peat forming system generally consists of two layers (Warner, 1992) - an upper layer (the acrotelm) which is aerobic, not permanently waterlogged, and biologically active and a lower level that is anaerobic and permanently waterlogged (the catotelm).

In Canada, peat cover is most extensive where there is a cool climate and very cold winters (-20° to -29°C), with relatively low mean annual precipitation (400-500 mm) (Zoltai, 1988b). After climate, surficial geology is the next strongest control on peatland distribution (Zoltai, 1988b). Peatlands develop on large flat plains of fine-textured soils where internal and overland drainage is slow, and in cool areas with low rainfall, in undrained depressions. They may also develop in more rugged areas where hard pan soil develop and on slopes both at points of groundwater discharge and in oceanic areas.

Peatlands show a large number of landform patterns depending on where they developed with respect to the climate and landscape (Zoltai, 1988b).

They are classified according to class and form, with the most common classes being bog and fen and the less common being swamp and marsh. Swamps and particularly marshes generally do no accumulate a sufficient thick layer of decaying organics (40 cm) to be classed as peatlands.

Bogs are peatlands having the water table at or near the surface (Zoltai, 1988b). In contrast to fens, bogs develop under ombrotrophic conditions where groundwaters are not enriched in nutrient minerals. In bogs, the peat deposit has accumulated to the point where the surface lies above the groundwater table and it receives water only from precipitation. However, it should be noted that nutrients can be recycled through the peat profile (Damman, 1978). The dominant bog materials are weakly to decomposed *Sphagnum* and woody peat. Bogs, which may be treed (dominantly *Pica mariana* (black spruce)) or treeless, are usually covered with *Sphagnum spp.* and ericaceous shrubs

(*Kalmia angustifolia* (sheep laurel), *K. polifolia* (bog laurel), *Ledum groenlandicum* (Labrador tea), *Andromeda glaucophylla* (glaucous bog rosemary), *Chamaedaphne calyculata* (leather leaf), *Gaylussacia spp.* (huckleberry), *Empetrum nigrum* (black crowberry), and *Vaccinium oxycoccos* (small cranberry).

Fens are peatlands usually having the water table at or just above the surface (Zoltai, 1988b). Fens develop where the peatland is nourished by water that is enriched in dissolved calcium, magnesium, and other minerals obtained from the surrounding mineral soils. The dominant materials are moderately to well-decomposed sedge and/or brown moss peat of variable thickness. The vegetation consists predominately of sedges (*Carex spp.*), grasses, reeds, brown mosses, with some shrubs, and, at times, a sparse tree layer.

Swamps are mineral wetlands or less commonly peatlands with standing water or water gently flowing through pools or channels (Zoltai, 1988b). The water table is usually at or near the surface. Pronounced internal water movement from the margin or other mineral sources results in nutrient rich waters. Peat when present is primarily well-decomposed wood underlain, at time, by sedge peat. A dense cover of deciduous trees, coniferous trees, shrubs, herbs, and mosses characterizes vegetation.

Marshes are mineral wetlands or less commonly peatlands periodically inundated by standing or slowly moving water (Zoltai, 1988b). Surface water levels may fluctuate seasonnally, with declining levels exposing drawdown zones of matted vegetation or mudflats. The nutrient-rich waters vary from fresh to highly saline. The substratum usually consists of mineral material, although occasionally it consists of well-decomposed peat. Marshes characteristically show zonal or mosaic surface patterns composed of pools or channels interspersed with clumps of emergent sedges, grasses, rushes and reeds that border grassy meadows and peripheral bands of shrubs or trees. Submerged and floating aquatics flourish in areas of open waters.

The following stages of peatland evolution have been established (Heinselman, 1963): 1) infilling of lake with organics; (2) downslope and lateral expansion of the peatland (paludification); (3) upslope peatland expansion by obstructing water flow (paludification); (4) local isolation of sites from contact with mineralized groundwaters; (5) rises in the peat surface and local water table, associated with *Sphagnum* colonization; and (6) development of patterned peatland communities.

Sphagnum Ecology

The information below was extracted mostly from a summary paper on *Sphagnum* ecology published by Clymo and Hayward (1982) and from an article on the Sphagnum moss taxonomy prepared by Andrus (1980). Surface vegetation in ombrotrophic (bog) and weakly minerotrophic (poor fen) peatlands is dominated by the *Sphagnum* species. *Sphagnum* has the ability to grow in wet conditions, with different species occupying different characteristic parts of the peatland, with respect to the water table levels. The species can hold 10 to 25 times their dry weight in water and retain this water for considerable periods of time. They are also able to draw water up by capillary action to the growing tips of the plant using the branches that hang down the stem.

Sphagnum plants are able also to acidify their own environment, and, hence, control the metabolism and succession of a plant community. The plants act as cation exchangers, releasing hydrogen ions in exchange for dissolved cations such as calcium, magnesium, sodium, and potassium. The exchange matrix consists of polyuronic acids found in the cellulose matrix of the cell wall.

The distribution and rate of growth of *Sphagnum* plants and the performance of one species relative to another are determined primarily by the supply of water and by the concentrations of solutes, particularly of Ca^{2+} and H^{+}. The general requirements are an assured water supply with a relatively low concentration of Ca^{2+}. The growth rate of

Sphagnum is not only affected by the concentration but also the rate of supply of the solutes.

Sphagnum plants grow at the apex. The apex produces initials that develop into branches of fixed length, though in a few cases these may themselves branch. While branches are increasing in length, the internodes of the main stem do not elongate. This results in the branches and attendant leaves forming a compact hemispherical head, known as the capitulum. After branch growth is finished the internodes elongate.

The *Sphagnum* stems grade from live to dead material, with no clear demarcation between the two. The *Sphagnum* branch dies and decays predominantly aerobically until its structure collapses and thereby raises the water-saturated layer to cover it. From this point on the decay is predominantly anaerobic. As well as physical causes for compaction there is also biological processes of decay. Below the level of water-saturation, micro-organisms, primarily fungi and bacteria, living on the plant remnants use the molecular oxygen in solution. In the long term, the level of water saturation rises steadily too, because as the plant remnants humify and pack down more tightly, the lateral hydraulic conductance falls, and the water table rises when it rains. Thus, as the plants grow at the apex the water-saturated level follows them upwards.

The rate at which dead *Sphagnum* and other plant materials enter the anaerobic zone depends partly on the rate at which new plant material is produced and partly on the proportion of that material which is lost while passing through the aerobic zone. Decomposition is rapid in the upper layer and slower in the lower level where anaerobic processes are active. Estimates of the amount of material that survives the passage through the acrotelm to the catotelm vary - only 10% to 42% or around 50%. Residence time in the acrotelm is usually 25 to 200 years (Malmer and Holm, 1984). In the lower anaerobic layer decay continues at very slow rates, 2 to 3 orders of magnitude lower (Clymo, 1983) leaving strongly refractory materials.

Peat is composed of approximately 50% carbon by mass. Gorham (1991) estimates the overall global rate of carbon accumulation in northern peatlands at 29 g C m^{-2} yr^{-1} over the past 4600 years, but when deep catotelm decay is considered this rate lowers to 23 g C m^{-2} yr^{-1}. These accumulation rates are thought to represent between 7 and 9% of net primary production (Tolonen et al., 1992; Gorham, 1995).

Humification increases downward from the surface through the loss of structure and is highly correlated with bulk density and hydraulic conductivity. In the Rouyn-Noranda area, the bulk density of hummock peat increased from about 0.01 to about 0.1 g cm^{-3} at depths greater than 45 cm, whereas in the hollow it is generally 0.10 g cm^{-3} or greater below a depth of 10 cm. Near the surface the peat is fibrous becoming less so down the profile. Some researchers have reported that bulk density is generally high (0.06 g cm^{-3}) at the surface of the peat where the tops of the *Sphagnum* plants are tightly packed. Changes in the bulk density and strong hydrologic anisotropy in peat appear to be related to the changing orientation of stems and subsequent collapse of structure.

Sphagnum is unusual in that the rate of decay of the dead material is unusually slow. The initial advantage of the relatively slow rate of aerobic decomposition of *Sphagnum* can lead to its over representation in peat. The slow rate reflects the very low concentration of N in these plants, the acid conditions produced by the *Sphagnum* itself and the generally wet environment. Decomposition of *Sphagnum* is partly regulated by chemical properties of the mosses and their resistance to decay. Some materials such as colour pigments are lost during decomposition while new ones are formed such as waxes by aphids (Clymo, 1983). While *Sphagnum* lacks lignin it contains high amounts of a polyuronic acid unique to *Sphagnum* which may act as a decay inhibitor (Kalviainen and Karuenen, 1984). The presence of waxes and lipid polymers may also slow decomposition (Kalvianinen and Karunen, 1984). Species that tend to decay more slowly eventually come to dominate the peat body over time. Decomposition rates of hollow species are higher than those of hummock species (Johnson et al., 1990, Johnson and Damman, 1991; Ohlson and Dahlberg, 1991).

APPENDIX B

ROUYN-NORANDA PEATLAND SITE DESCRIPTIONS

Site Number	Site Number (data generated for 24 sites numbered between 97KFA3500 and 97KFA3540)
Sector	Position of the site with respect to the compass direction from the smelter
Distance (km)	Distance from smelter in kilometres
Lat (deg)	Latitude (degrees)
Long (deg)	Longitude (degrees)
Location Description	Position of site with respect to the nearest town
Hummock Samples	Samples hand cut from hummock, with length in centimetres (yes or no)
Flat Samples	Surface and core samples from hollow or flat part of peatland with length in centimetres (yes (with sampling depth) or no)
pH Water	pH of water at or near hummock base
Site Description	Description of peatland setting, vegetation, and underlying materials with date sampled

Rouyn-Noranda Peatland Site Descriptions

Site Number	Sector	Distance (km)	Lat (deg)	Long (deg)	Location Description	Hummock Samples	Flat Samples	pH Water
97KFA3500	se	17.2	48.170400	-78.809317	~5km S of Farmborough	Yes (45 cm)	Yes (Hand cut to 19 cm)	4.1 at or below hummock base
97KFA3503	w	20.7	48.278866	-79.289400	~9.2km NNW of Arntfield	Yes (32.5 cm	Yes (210 cm)	5.1 at or below hummock base
97KFA3510	n	11.1	48.349667	-79.025000	~2.5km S of D'Alembert - E side of highway	Yes (32 cm)	Yes (104 cm)	4.0 at or below hummock base
97KFA3511	n	33.1	48.554517	-79.038317	At Collin Destor	Yes (41 cm)	Yes (174 cm)	3.9 at or below hummock base
97KFA3512	w	38.4	48.163517	-79.570267	~1.5km N of Cheminis, Ont.	Yes (20 cm)	No	N/A

Rouyn-Noranda Peatland Site Descriptions

Site Number	Site Description	Site Description (continued)
97KFA3500	Open shrubby peatland with *Ledum groenlandicum, Myrica* and a number of *Sphagnum* sp. Elevation 800'. Hummock is large and spongy with surface dominated by *S. capillifolium*. Hollow located 3m from hummock. Hollow surface dominated by *Mylia anomala* and Hepaticae, undiff.	Very wet with water showing in hollows. 200m from road. Evidence of grass fire from charred tree stumps up to 10 cm above ground. In hollow, mineral soil intercepted at 45 cm. Sept. 25/97
97KFA3503	Peatland patch above large marsh and small lakes. Elevation 1200'. *Sphagnum* hummocks covered with *Chamaedaphne calyculata*, *Ledum groenlandicum* and some *Eriophorum vaginatum*.	Hummocks are composed of poorly-decomposed and rooty *Sphagnum* peat. Hummock surface is dominated by *Sphagnum russowii*. In flat peatland, gyttja intercepted at 135 cm and glacial sediment at 210 cm. Sept. 27/97.
97KFA3510	Open, ericaceous fen with few trees. True *Sphagnum* hummock development only in a few small areas. Some sedge, *Chamaedaphne calyculata* and *Ledum groenlandicum* on hummocks.	Hummock surface is dominated by *Sphagnum russowii*. In flat peatland, silty clay was intercepted at 200 cm. Site is 100m from road. Dark coloured rock outcrop is nearby. Sept. 29/97
97KFA3511	Heavily forested black spruce peatland with *Sphagnum* hummocks > 0.5m high. Hummock surface is dominated by *Sphagnum fuscum* and *Powlia* sp. Water table at base of hummock.	Hummocks are dense and also support robust *Chamaedaphne calyculata*. Hollow surface at core site dominated by *Sphagnum russowii*. Grey lake sediment intercepted at 169 cm. Area of glaciofluvial ice contact deposits. Sept. 30/97.
97KFA3512	Small peatland area along poor road in forested area. Most hummocks are composed of *Pleurozium schreberi*; few *Sphagnum* peat hummocks. Surface of sample hummock is dominated by *S. russowi*.	Also associated with hummock is *Ledum groenlandicum*, *Cornus canadenis*, and *Coptis trifolia*. Bedrock directly below *Sphagnum* hummock. Oct. 1/97

Rouyn-Noranda Peatland Site Descriptions

Site Number	Sector	Distance (km)	Lat (deg)	Long (deg)	Location Description	Hummock Samples	Flat Samples	pH Water
97KFA3514	w	63.1	48.222800	-79.855500	~7.75km N of Northlands Park, Ont.	Yes (32 cm)	Yes (92 cm)	5.4 at or below hummock base; 4.4 near top of hummock
97KFA3519	e	61.9	48.338650	-78.194133	~11.3km N of Riviere Heva	Yes (66 cm)	No	4.6 at or below hummock base
97KFA3520	se	62.6	47.960550	-78.304250	~22.5km S of Rapide-Sept	Yes (63 cm)	No	N/A
97KFA3521	se	78.8	47.672033	-78.403100	~10.25km SW of Rapide-Sept	Yes (40 cm)	No	4.0 at or below hummock base
97KFA3522	se	73.2	47.825800	-78.282400	~7.75km NNE of Rapide-Sept	Yes (73 cm)	Yes (110 cm)	3.9 at or below hummock base

Rouyn-Noranda Peatland Site Descriptions

Site Number	Site Description	Site Description (continued)
97KFA3514	Peatland with thick cover of black spruce and many hummocks. Most hummocks have some sedge. Surface of sample hummock is dominated by *Sphagnum fuscum* and *S. magellanicum*.	Site overlies sand and is reforested near the road. Cocoon-like material in hummock between 12-19cm depth. Oct. 1/97
97KFA3519	Shallow peatland over rock outcrop. *Sphagnum* hummocks surrounded by *Cladina stellaris*. *Polytrichum strictum* common on small hummocks. Surface of sample hummock is dominated by *Sphagnum capillifolium*.	Surrounded by tall black spruce and tamarac. Mineral soil was intercepted at 73cm. *Sphagnum* has been previously sampled by others in pit 10 m away. Some logging activity in area. Oct. 3/97.
97KFA3520	Kettle hole peatland with black spruce and dead fall. Hummocks are about 60cm high over pink gneiss bedrock. Surface of sample hummock is dominated by *S. fuscum* and *S. capillifolium*. Surrounded by 5 year old clear-cut, haphazardly replanted.	Many *Pleurozium schreberi* hummocks present. Peatland lies along 1/3km on logging road. There are numerous boulders at surface but sediment appears too sorted to be glacialtill. B and C horizon soil samples collected from a nearby ditch. Oct.4/97.
97KFA3521	Peatland with hollows dominated by ericaceous shrubs and sedge. Some hummock development, many with *Polytrichum strictum* and sedge. Sample hummock covered by *Ledum groenlandicum, Chamaedaphne calyculata*, *Andromeda polifolia*, and *Oxycoccus microcarpus*.	Hummock was 0.5m high and 1.25m long in an open area. Surface dominated by *S. fuscum* and *S. magellanicum*. The region generally has thicker vegetation, is better drained, has less peat and more tall deciduous and pine trees than farther north in the study area. Gneissic boulders at surface. Oct.4/97.
97KFA3522	Peatland with many black spruce trees. Hummocks mainly *Pleurozium schreberi*. Sampled *Sphagnum* hummock . *Sphagnum* spp. and *Pleurozium schreberi* dominate the hollow surface.	Roadside peatland. Oct. 4/97.

Rouyn-Noranda Peatland Site Descriptions

Site Number	Sector	Distance (km)	Lat (deg)	Long (deg)	Location Description	Hummock Samples	Flat Samples	pH Water
97KFA3523	s	58.1	47.754833	-79.216600	~1km SW of Remigny	Yes (34 cm)	No	4.2 at hollow; 3.8 at hummock base
97KFA3525	se	29.5	48.136617	-78.668533	~10km SSE of Joannes	Yes (52 cm)	Yes (132 cm)	3.9 at or below hummock base
97KFA3526	se	35.4	48.041900	-78.673417	~20.25km S of Joannes	Yes (32 cm)	Yes (90 cm)	4 at or below hummock base
97KFA3527	e	15.2	48.229233	-78.814150	~1.75km N of Farmborough	Yes (45 cm)	Hand cut to 25 cm	4 at or below hummock base
97KFA3528	n	57.6	48.748867	-78.819033	~3.75km NE of Authier	Yes (58 cm)	Yes (100 cm)	4.7 at or below base of hummock; 5.5 at 30 cm from hummock surface; 5.7 at top of hummock

Rouyn-Noranda Peatland Site Descriptions

Site Number	Site Description	Site Description (continued)
97KFA3523	Abandoned farm field returning to peatland. Small hummocks with mineral soil close to surface. Surface dominated by *S. magellanicum* and *S. fallax*. *Ledum groenlandicum* also present with some *Chamaedaphne calyculata*, *Oxycoccus microcarpus*, *Polytrichum strictum*, stunted alder, black spruce and larch.	Silty clay at 35 cm. Located on the Rolet Moraine. Region has extensive sediment cover, is well-drained and covered with deciduous forest. Water at hollow surface. Most wetlands in this part of the study area are either marsh or swamp. Oct. 5/97.
97KFA3525	Small peatland in area of esker with subaqueous fan 200 m away. Peatland is open and covered with ericaceous shrubs and dead black spruce. Hummock of *S. fuscum*, with *Chamaedaphne calyculata*, *Andromeda polifolia* and *Ledum groenlandicum*.	Hollow of *S. magellanicum* and *S. russowii*. Hummock well-developed , approximately 1.25 m across. Some *Pleurozium schreberi* in peatland. Silty sand intercepted in hollow at 129 cm. Oct. 6/97.
97KFA3526	Peatland with well-developed hummocks and dead black spruce. Hummock surface covered with *S. magellanicum*. Water table at 37cm. Hollow surface dominated by *S. fallax*. Very wet conditions. Mineral soil at 60cm.	Access is via a logging road. Clear cutting is evident. Oct. 6/97.
97KFA3527	Some hummock development in a small undrained depression in rock outcrop. Area covered by black spruce. Hummock and hollow surface dominated by *S. russowii*.	Oct. 6/97
97KFA3528	Black spruce forest with *Sphagnum* hummock development. Hummock surface covered with *S. fuscum*, *S. magellanicum* and *S. capillifolium*.	Hummock sampled was 60cm tall and 1.5m wide. Hollow surface covered by *S. fuscum* and *S. capillifolium*. In hollow, grey clay intercepted at 96 cm. Hummocks near the road covered with *Polytrichum strictum*. Oct. 7/97.

Rouyn-Noranda Peatland Site Descriptions

Site Number	Sector	Distance (km)	Lat (deg)	Long (deg)	Location Description	Hummock Samples	Flat Samples	pH Water
97KFA3529	n	80.8	48.965183	-78.864133	~8.25km ENE of Saint-Eugene-de-Chazel	Yes (37 cm)	Yes (150 cm)	5.3 at or below base of hummock; 4.2 at top of hummock
97KFA3530	nw	91.7	48.957450	-79.654633	~14.5km W of Saint-Lambert	Yes (54 cm)	Yes (84 cm)	N/A
97KFA3533	w	9.8	48.247533	-79.141150	~1.25km NW of Evain	Yes (67 cm)	Yes (272 cm)	3.4 at or below hummock base
97KFA3534	w	8.6	48.255367	-79.129550	~1.5km N of Evain	Yes (51 cm)	Yes (200 cm)	2.7 at or below hummock base
97KFA3536A	nw	7.1	48.307500	-79.061983	~4.0km SSE of Waite Mine	Yes (43 cm)	No	3.9 at or below hummock base
97KFA3536	nw	7.1	48.307500	-79.061983	~4.0km SSE of Waite Mine	Yes (49 cm)	No	3.9 at or below hummock base

Rouyn-Noranda Peatland Site Descriptions

Site Number	Site Description	Site Description (continued)
97KFA3529	Large peatland with *Sphagnum fuscum* hummocks and some small shrubs. Sample hollow cover is dominantly *S. fallax*. Surrounding forest is mix of tamarac and black spruce. Area sampled is in the open.	Water table is at a depth of 40 cm in hummock and 15 cm below hollow surface. Oct. 7/97.
97KFA3530	Thick black spruce forest with *Sphagnum fuscum* hummocks and *S. fallax* in the hollows. Hummocks also covered with *Ledum groenlandicum*, *Oxycoccus microcarpus* and *Andromeda polifolia*.	In hollow, mineral soil intercepted at 144 cm. Site located north of Lake Abitibi in clay belt. Hummocks are about 30 to 60cm high and 1.25m in diameter. Oct. 7/97.
97KFA3533	Peatland with hummocks covered with *Sphagnum fuscum* and *S. russowii*. *Chamaedaphne calyculata* leaves found within peat, Hollow covered with *C. calyculata*, ericaceous roots, lichen and no sphagnum. Water table 73cm from top of hummock.	Blue clay intercepted at 242 cm. Marsh is about 50m west of site. Hummocks are 50cm high and 1m in diameter. Power installation at end of dead end road northeast of Evain. Oct. 9/97.
97KFA3534	Very dry at peatland surface. Cover of ericaceous shrubs (*Chamaedaphne calyculata* and *Ledum groenlandicum*) with few actively accumulating hummocks. Black peat exposed in the hollows. Hummocks have dense cover dominated by *Sphagnum russowii*.	Water table is at 52 cm in hummock. Located just north of Evain, houses 100m away. Oct. 9/97.
97KFA3536A	Small alder - birch wetland with small hummocks. Sample hummock cover dominated by *S. russowii* and *S. girgensohnii*. Hollow is 25cm of organic materials over till.	Located north of smelter in area of deserted mines. Road looks to be built of gossan rock. Oct. 9/97.
97KFA3536	As above	As above

Rouyn-Noranda Peatland Site Descriptions

Site Number	Sector	Distance (km)	Lat (deg)	Long (deg)	Location Description	Hummock Samples	Flat Samples	pH Water
97KFA3537	se	11.9	48.171250	-78.916817	~4.75km S of McWaters	Yes (32 cm)	Yes (150 cm)	3.4
97KFA3538	s	9.6	48.170333	-79.026750	~3.25km SSE of Granada	Yes (23 cm)	No	3.8
97KFA3539	s	10.4	48.167317	-79.031217	~3.75km SSE of Granada	Yes (35 cm)	No	3.6
97KFA3540A	sw	11.6	48.170233	-79.099750	~5.0km SW of Granada	Yes (40 cm)	As Below	3.8
97KFA3540	sw	11.6	48.170233	-79.099750	~5.0km SW of Granada	Yes (60 cm)	Yes (272 cm)	3.8

Rouyn-Noranda Peatland Site Descriptions

Site Number	Site Description	Site Description (continued)
97KFA3537	Ericaceous peatland with minor hummock development. *Chamaedaphne calyculata*, *Ledum groenlandicum* and *Sphagnum squarossum* are present in hollows.	*Pleurozium schreberi* is plentiful at site. East of Lac La Bruere. Oct. 10/97.
97KFA3538	Possibly swamp developing into fen. Sedge, *Equisetum*, *Ledum groenlandicum* and spruce are common. Many areas of open water. Hummock top covered with *Sphagnum russowii*. There are white fuzzy cocoons within hummock.	Site is 30m from south side of road. Oct. 11/97.
97KFA3539	Very wet peatland. Most hummocky features are composed of ericaceous shrubs but some are true *Sphagnum* hummocks. Ripe *Oxycoccus microcarpus* is common.	*Sphagnum riparium* found in hollows. Sample hummock is dominated by *Sphagnum fallax*. Site located behind children's camp. Oct. 11/97.
97KFA3540A	Peatland with ericaceous shrubs and some *Sphagnum* hummock development. Hummock sample surface is covered with *Sphagnum russowii* with abundant *Polytrichum strictum* and *Chamaedaphne calyculata*. Hollows have cover of *S. russowii* and sedge. *Pleurozium schreberi* is common at site.	Hummock is 60cm high and is oblong (1x1.5m) Oct. 11/97.
97KFA3540	As above.	Oct. 11/97.

APPENDIX C

FIELD DESCRIPTIONS OF PEAT IN HUMMOCK AND HOLLOW SEQUENCES

Site Number/Sample Type	Site number with modifier "h" or "f"; "h" indicates sequence from hummock and "f" the sequence from the flat part of the peatland
Sequence Type	Hummock - *Sphagnum* peat taking the form of a raised mound 25 to 60 cm high Flat - peat in sequence from flat part of peatland (hollow) adjacent to the hummock
Depth (cm)	Depth from the surface in centimetres
From	Depth at top of sample or core interval in centimetres
To	Depth at base of sample or core interval in centimetres
Sequence Description	Description of peat materials with depth

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3500h	Hummock	0.0	5.1	Living *Sphagnum* , very green.
97KFA3500h	Hummock	5.1	12.7	Peat; undecomposed; light brown ; some roots.
97KFA3500h	Hummock	12.7	20.3	Peat; undecomposed; darker than above; some roots.
97KFA3500h	Hummock	25.4	38.1	Peat; fairly undecomposed; darker brown than above; some white roots.
97KFA3500h	Hummock	38.1	45.7	Peat; dark brown; sedge-rich; abundant white roots.
97KFA3500f	Flat	0.0	3.0	Green living bryophyte.
97KFA3500f	Flat	3.0	6.0	Peat
97KFA3500f	Flat	6.0	10.0	Peat; brown.
97KFA3500f	Flat	10.0	19.0	Peat; moderately decomposed.
97KFA3503h	Hummock	0.0	3.0	Live *Sphagnum* with leatherleaf and woody roots.
97KFA3503h	Hummock	3.0	16.0	Peat; poorly decomposed; light brown; leatherleaf roots.
97KFA3503h	Hummock	16.0	33.0	Peat; as above but slightly darker brown.
97KFA3503h	Hummock	33.0	39.0	Peat; darker brown; large root mass at 39.0cm.
97KFA3503f	Flat	0.0	10.0	Peat; not sampled.
97KFA3503f	Flat	10.0	31.0	Peat; partially decomposed; black; wood-rich; sedge-dominant.
97KFA3503f	Flat	31.0	60.0	Peat; partially decomposed; black; woody.
97KFA3503f	Flat	60.0	89.0	Peat; well decomposed; sedge-rich with wood layers.
97KFA3503f	Flat	89.0	135.0	Peat; well decomposed; humic; dark.
97KFA3503f	Flat	135.0	160.0	Peat; sedge-rich; contains grey "gyttja" layers.
97KFA3503f	Flat	160.0	175.0	Peat; well decomposed; dark; some sedge roots and leaves.
97KFA3503f	Flat	175.0	198.0	Gyttja with sedge-rich peat.
97KFA3503f	Flat	198.0	210.0	Mostly mineral soil; some organic material.
97KFA3510h	Hummock	0.0	2.0	Living *Sphagnum;* ericaceous roots.
97KFA3510h	Hummock	2.0	5.0	Recently living *Sphagnum* with ericaceous roots.
97KFA3510h	Hummock	5.0	19.0	Peat; *Sphagnum;* light brown; some ericaceous roots.
97KFA3510h	Hummock	19.0	32.0	Peat; *Sphagnum;* fibric; medium brown; some ericaceous roots.
97KFA3510f	Flat	0.0	5.0	Living *Sphagnum.*
97KFA3510f	Flat	5.0	19.0	No description
97KFA3510f	Flat	20.0	50.0	Peat; sedge, wood-rich; black; some fibres.
97KFA3510f	Flat	50.0	63.0	Peat; sedge; black; few fibres.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3510f	Flat	63.0	74.0	Peat; sedge; wood-rich; no visible fibres.
97KFA3510f	Flat	74.0	104.0	Peat; bands of wood; dry; dark brown. Site nearby possessed wood under clay at 100cm.
97KFA3511h	Hummock	0.0	2.0	Living *Sphagnum* fuscum; dense.
97KFA3511h	Hummock	2.0	36.0	Peat; *Sphagnum;* undecomposed; dense, light brown.
97KFA3511h	Hummock	36.0	41.0	Peat; *Sphagnum,* dense, gradually darker brown than above.
97KFA3511f	Flat	0.0	9.0	*Sphagnum;* living and recently dead; dense.
97KFA3511f	Flat	9.0	25.0	Peat; *Sphagnum*
97KFA3511f	Flat	30.0	50.0	Peat; dark brown; some roots.
97KFA3511f	Flat	50.0	140.0	Peat; dark brown; some sedge roots.
97KFA3511f	Flat	140.0	169.0	Peat; more decomposed than above; dark brown; less fibrous.
97KFA3511f	Flat	169.0	174.0	Sediment; fine-grained, gray.
97KFA3512h	Hummock	0.0	3.0	Living *Sphagnum;* some woody roots.
97KFA3512h	Hummock	3.0	20.0	Peat; *Sphagnum;* poorly decomposed; few woody roots.
97KFA3514h	Hummock	0.0	3.0	Living *Sphagnum.*
97KFA3514h	Hummock	3.0	12.0	Peat; *Sphagnum;* fibric; light brown.
97KFA3514h	Hummock	12.0	27.0	Peat; *Sphagnum;* fibric; medium brown; cocoon-like structures at 12-19cm.
97KFA3514h	Hummock	27.0	32.0	Peat; *Sphagnum;* fibric; dark brown; woody roots.
97KFA3514f	Flat	0.0	6.0	Living and recently dead *Sphagnum.*
97KFA3514f	Flat	6.0	92.0	Not described.
97KFA3519h	Hummock	0.0	2.0	Living *Sphagnum;* contains extensive *Polytrichum* and *Ledum* roots.
97KFA3519h	Hummock	2.0	10.0	*Sphagnum;* recently dead; yellow; similar to above.
97KFA3519h	Hummock	10.0	26.0	Peat; *Sphagnum;* denser than above; light brown; contains *Polytrichum* and *Ledum* roots.
97KFA3519h	Hummock	26.0	33.0	Peat; *Sphagnum;* similar to above but wetter and denser.
97KFA3519h	Hummock	33.0	41.0	Peat; *Sphagnum;* slightly more decomposed and darker than above; contains some *Ledum* and *Polytrichum* roots.
97KFA3519h	Hummock	41.0	50.0	Peat; *Sphagnum;* darker brown; still loose but more compact than above; poorly decomposed; contains *Ledum* and *Polytrichum* roots.
97KFA3519h	Hummock	50.0	58.0	Peat; dark brown; more rooty than above; some ericaceous roots.
97KFA3519h	Hummock	58.0	66.0	Peat; dark brown; more decomposed than above; abundant ericaceous roots.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3519f	Flat	0.0	20.0	Not sampled.
97KFA3519f	Flat	20.0	40.0	Sand.
97KFA3519f	Flat	> 40		Bedrock.
97KFA3520h	Hummock	0.0	3.0	Living *Sphagnum*.
97KFA3520h	Hummock	3.0	7.0	*Sphagnum;* recently dead; loose.
97KFA3520h	Hummock	7.0	16.0	Peat; *Sphagnum;* poorly decomposed; light brown.
97KFA3520h	Hummock	16.0	28.0	Peat; as above, some leaves.
97KFA3520h	Hummock	28.0	38.0	Peat; poorly decomposed; slightly browner and more compact than above.
97KFA3520h	Hummock	38.0	47.0	Peat; poorly decomposed with many black layers and roots.
97KFA3520h	Hummock	47.0	57.0	Peat; similar to above but more decomposed.
97KFA3520h	Hummock	57.0	63.0	Peat; *Sphagnum;* dark; contains some wood
97KFA3521f	Hummock	0.0	3.0	Living *Sphagnum;* abundant leatherleaf.
97KFA3521f	Hummock	3.0	11.0	*Sphagnum;* recently dead; rusty brown; contains woody roots and leatherleaf leaves.
97KFA3521f	Hummock	11.0	18.0	Peat; rusty brown; contains woody roots and stems and leatherleaf leaves; more wood than above.
97KFA3521f	Hummock	18.0	23.0	Peat; *Sphagnum*-rich; similar to above with ericaceous roots.
97KFA3521f	Hummock	23.0	30.0	Peat; *Sphagnum;* slightly more decomposed than above; dark brown.
97KFA3521f	Hummock	30.0	40.0	Peat; *Sphagnum;* woody and ericaceous roots; very wet at 35 cm.
97KFA3522h	Hummock	0.0	4.0	Living *Sphagnum*.
97KFA3522h	Hummock	4.0	8.0	*Sphagnum;* recently dead; light brown.
97KFA3522h	Hummock	8.0	32.0	Peat; *Sphagnum;* poorly decomposed; light brown; contains ericaceous roots.
97KFA3522h	Hummock	32.0	40.0	Peat; *Sphagnum;* poorly decomposed; light brown; contains some ericaceous roots; denser than above.
97KFA3522h	Hummock	40.0	48.0	Peat; more decomposed and darker than above; abundant woody roots and stems.
97KFA3522h	Hummock	48.0	73.0	Peat; *Sphagnum;* poorly decomposed; dark brown with numerous ericaceous and woody roots and some feather moss.
97KFA3522f	Flat	0.0	3.0	Living *Sphagnum*.
97KFA3522f	Flat	3.0	5.0	*Sphagnum;* recently dead; light brown.
97KFA3522f	Flat	5.0	20.0	Peat; *Sphagnum;* decomposed; dense; dark brown; contains feather moss and ericaceous roots.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3522f	Flat	24.0	34.0	Peat; *Sphagnum;* fibric; contains ericaceous roots and feathermoss.
97KFA3522f	Flat	34.0	75.0	Peat; much more decomposed than above; dark brown; contains feather moss and ericaceous root fibres; some sedge between 50 and 75 cm.
97KFA3522f	Flat	75.0	100.0	Peat; similar to above; some *Sphagnum* noted.
97KFA3522f	Flat	100.0	106.0	Peat; similar to above but more decomposed and denser; contains burn layers, wood chips and roots.
97KFA3522f	Flat	106.0	110.0	Clay; grey.
97KFA3523h	Hummock	0.0	4.0	Living *Sphagnum.*
97KFA3523h	Hummock	4.0	11.0	Peat; *Sphagnum;* poorly decomposed; loose; brown.
97KFA3523h	Hummock	11.0	17.0	Peat; similar to above but denser.
97KFA3523h	Hummock	17.0	23.0	Peat; *Sphagnum;* slightly more decomposed and denser; wet; darker than above.
97KFA3523h	Hummock	23.0	29.0	Peat; similar to above but rootier.
97KFA3523h	Hummock	29.0	34.0	Peat; contains less *Sphagnum* than above; ericaceous roots and sedge predominant; large woody roots at base of hummock.
97KFA3523f	Flat			Silt and clay.
97KFA3525h	Hummock	0.0	2.0	Living *Sphagnum.*
97KFA3525h	Hummock	2.0	11.0	*Sphagnum;* light brown; some ericaceous roots.
97KFA3525h	Hummock	11.0	14.0	Peat; similar to above but more compact.
97KFA3525h	Hummock	14.0	22.0	Peat; similar to above but more compact.
97KFA3525h	Hummock	22.0	37.0	Peat; similar to above but darker, denser, and rootier.
97KFA3525h	Hummock	37.0	45.0	Peat; fibric; brown; dense; rooty.
97KFA3525h	Hummock	45.0	52.0	Peat; well decomposed; very dark dense, rooty, and wet.
97KFA3525f	Flat	0.0	3.0	Living *Sphagnum.*
97KFA3525f	Flat	3.0	10.0	Peat; recently dead *Sphagnum;* light brown; very wet.
97KFA3525f	Flat	10.0	27.0	Peat; *Sphagnum;* fibric; contains ericaceous roots; sedge-poor.
97KFA3525f	Flat	27.0	35.0	Peat; *Sphagnum;* mesic; h some sedge and ericaceous roots.
97KFA3525f	Flat	35.0	41.0	Peat; very decomposed *Sphagnum* and sedge.
97KFA3525f	Flat	50.0	80.0	Peat; sedge; fibric; dark brown.
97KFA3525f	Flat	80.0	129.0	Peat; sedge; dark brown; more decomposed and woody than above.
97KFA3525f	Flat	129.0	132.0	Silty sand.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3526h	Hummock	0.0	4.0	Living *Sphagnum*.
97KFA3526h	Hummock	4.0	16.0	*Sphagnum;* recently dead; light brown; contains some ericaceous roots.
97KFA3526h	Hummock	16.0	22.0	Peat; *Sphagnum;* similar to above but more decomposed and slightly darker.
97KFA3526h	Hummock	22.0	27.0	Peat; *Sphagnum;* darker than above with ericaceous and sedge roots.
97KFA3526h	Hummock	27.0	32.0	Peat; *Sphagnum;* more fibrous ericaceous roots.
97KFA3526f	Flat	0.0	7.0	Living *Sphagnum* to 3 cm; poorly decomposed below 3cm.
97KFA3526f	Flat	7.0	19.0	Peat; sedge-rich; light brown..
97KFA3526f	Flat	19.0	32.0	Peat; sedge-rich; some ericaceous roots.
97KFA3526f	Flat	32.0	50.0	Peat; sedge-rich; dark brown.
97KFA3526f	Flat	83.0	90.0	Sand.
97KFA3527h	Hummock	0.0	7.0	Living *Sphagnum*.
97KFA3527h	Hummock	7.0	12.0	*Sphagnum;* recently dead; rusty brown; contains woody roots and stems, and leatherleaf leaves.
97KFA3527h	Hummock	12.0	25.0	Peat; *Sphagnum;* undecomposed; light brown.
97KFA3527h	Hummock	25.0	32.0	Peat; *Sphagnum;* darker brown than above; wetter.
97KFA3527h	Hummock	32.0	38.0	Peat; *Sphagnum;* dark brown; contains ericaceous roots.
97KFA3527h	Hummock	38.0	45.0	Peat; sedge-rich; dark brown; contains woody roots.
97KFA3527f	Flat	0.0	7.0	Living *Sphagnum*.
97KFA3527f	Flat	7.0	14.0	*Sphagnum;* brown; dense.
97KFA3527f	Flat	14.0	25.0	Peat; *Sphagnum;* dark brown.
97KFA3528h	Hummock	0.0	3.0	Living *Sphagnum*.
97KFA3528h	Hummock	3.0	7.0	*Sphagnum;* recently dead; fluffy; light brown.
97KFA3528h	Hummock	7.0	12.0	Peat; *Sphagnum;* slightly more dense than above; light brown.
97KFA3528h	Hummock	12.0	26.0	Peat; *Sphagnum;* more dense; brown.
97KFA3528h	Hummock	26.0	40.0	Peat; *Sphagnum;* darker brown; dense; contains some ericaceous roots.
97KFA3528h	Hummock	40.0	49.0	Peat; *Sphagnum;* more decomposed than above; dense; dark brown; contains ericaceous roots.
97KFA3528h	Hummock	49.0	58.0	Peat; sedge-rich; decomposed (though still fibric), contains abundant ericaceous roots; little visible *Sphagnum*.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3528f	Flat	0.0	3.0	Living *Sphagnum.*
97KFA3528f	Flat	3.0	7.0	Peat; *Sphagnum;* light brown; contains some sedge and ericaceous roots.
97KFA3528f	Flat	7.0	14.0	Peat; *Sphagnum;* brown; contains some roots.
97KFA3528f	Flat	14.0	19.0	Peat; *Sphagnum;* darker brown and more decomposed than above; some sedge; dense.
97KFA3528f	Flat	20.0	35.0	Peat; sedge-rich; dark brown; contains ericaceous fibrous roots.
97KFA3528f	Flat	35.0	50.0	Peat; similar to above but woody roots more abundant.
97KFA3528f	Flat	50.0	94.0	Peat; mesic to humic; dark brown; contains small pieces of wood.
97KFA3528f	Flat	96.0	100.0	Clay; gray.
97KFA3529h	Hummock	0.0	3.0	Living *Sphagnum.*
97KFA3529h	Hummock	3.0	8.0	*Sphagnum;* recently dead.
97KFA3529h	Hummock	8.0	20.0	Peat; *Sphagnum;* fibric; light brown.
97KFA3529h	Hummock	20.0	27.0	Peat; *Sphagnum;* fibric (partially decomposed); light brown; rooty.
97KFA3529h	Hummock	27.0	37.0	Peat; sedge and *Sphagnum;* light brown.
97KFA3529f	Flat	0.0	2.0	Living *Sphagnum.*
97KFA3529f	Flat	2.0	8.0	Peat; *Sphagnum;* dark brown.
97KFA3529f	Flat	8.0	34.0	Peat; sedge; dark brown.
97KFA3529f	Flat	34.0	50.0	Peat; decomposed, very dark brown; rooty.
97KFA3529f	Flat	50.0	100.0	Peat; dark brown peat; contains pieces of wood.
97KFA3529f	Flat	100.0	128.0	Peat; very dark brown; contains pieces of wood.
97KFA3529f	Flat	128.0	140.0	Peat; very dark brown; drier than above.
97KFA3529f	Flat	140.0	150.0	Mineral sediment.
97KFA3530h	Hummock	0.0	5.0	Living *Sphagnum.*
97KFA3530h	Hummock	5.0	11.0	*Sphagnum;* recently dead.
97KFA3530h	Hummock	11.0	32.0	*Sphagnum;* fibric; light brown.
97KFA3530h	Hummock	32.0	36.0	Peat; *Sphagnum;* some sedge; darker brown than above.
97KFA3530h	Hummock	36.0	42.0	Peat; more decomposed and darker brown than above; distinct break in material at 42cm
97KFA3530h	Hummock	42.0	54.0	Peat; *Sphagnum;* very dark brown; contains some sedge and wood peat.
97KFA3530f	Flat	0.0	3.0	Living *Sphagnum.*
97KFA3530f	Flat	3.0	8.0	Peat; *Sphagnum;* decomposed, dark brown; contains ericaceous roots and some sedge.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3530f	Flat	8.0	20.0	Peat; sedge and ericaceous remnants; decomposed; dense, dark brown; wet; no *Sphagnum* visible.
97KFA3530f	Flat	24.0	54.0	Peat; sedge; well-decomposed; white sedge roots or stems.
97KFA3530f	Flat	54.0	84.0	Clay; blue-gray; contains some sandy layers.
97KFA3533h	Hummock	0.0	5.0	Living *Sphagnum;* contains some leatherleaf leaves.
97KFA3533h	Hummock	5.0	7.5	*Sphagnum;* light brown.
97KFA3533h	Hummock	7.5	14.0	Peat; *Sphagnum;* similar to above but slightly denser.
97KFA3533h	Hummock	14.0	17.0	Peat; *Sphagnum;* brown.
97KFA3533h	Hummock	17.0	25.0	Peat; *Sphagnum;* similar to above but slightly denser and rootier.
97KFA3533h	Hummock	25.0	48.0	Peat; *Sphagnum;* denser and darker than above; abundant roots.
97KFA3533h	Hummock	48.0	52.0	Peat; *Sphagnum* to 40 cm and sedge-rich below 40 cm; brown; contains ericaceous roots.
97KFA3533h	Hummock	52.0	56.0	Peat; wood-rich; dark brown; dense; contains sedge and ericaceous roots
97KFA3533h	Hummock	56.0	60.0	Peat; very dark brown; contains fibrous ericaceous and woody roots; little visible sedge.
97KFA3533h	Hummock	60.0	67.0	Peat; similar to above but more sedge-rich.
97KFA3533f	Flat	0.0	5.0	Peat; dry; light brown; no *Sphagnum* visible; contains leatherleaf leaves, ericaceous roots, and lichen.
97KFA3533f	Flat	5.0	10.0	Peat; similar to above but more decomposed.
97KFA3533f	Flat	8.0	30.0	Peat; sedge; decomposed; dark brown; wet; contains woody bands and ericaceous roots.
97KFA3533f	Flat	30.0	75.0	Peat; similar to above but more mesic; large piece of rotted wood at 75cm.
97KFA3533f	Flat	75.0	100.0	Peat; similar to above except fewer woody bands.
97KFA3533f	Flat	100.0	111.0	Peat; mesic to humic; contains ericaceous roots; sedge barely recognizable.
97KFA3533f	Flat	111.0	115.0	Wood-rich layer
97KFA3533f	Flat	115.0	127.0	Similar to 100-111cm.
97KFA3533f	Flat	127.0	152.0	Peat; nearly humic; no recognizable sedge or roots; some wood.
97KFA3533f	Flat	152.0	177.0	Peat; similar to above but abundant wood.
97KFA3533f	Flat	177.0	202.0	Peat; humic; dark brown; some roots and wood.
97KFA3533f	Flat	202.0	227.0	Peat; large pieces of poorly decomposed wood; lighter brown than above; some sedge and roots.
97KFA3533f	Flat	227.0	238.0	Peat; humic; black; some wood and fibre.
97KFA3533f	Flat	238.0	242.0	Peat; contains some blue clay.
97KFA3533f	Flat	242.0	272.0	Clay; blue.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3534h	Hummock	0.0	3.0	Living *Sphagnum*.
97KFA3534h	Hummock	3.0	9.0	*Sphagnum;* recently dead.
97KFA3534h	Hummock	9.0	13.0	Peat; *Sphagnum;* similar to above with woody roots.
97KFA3534h	Hummock	13.0	19.0	Peat; *Sphagnum;* contains with woody roots and sedge roots.
97KFA3534h	Hummock	19.0	33.0	Peat; *Sphagnum;* dark brown; contains lots of ericaceous and woody roots.
97KFA3534h	Hummock	33.0	40.0	Peat; *Sphagnum;* similar to above but wetter and darker at 40cm.
97KFA3534h	Hummock	40.0	46.0	Peat; sedge-rich; darker, denser, and more rooty than above.
97KFA3534h	Hummock	46.0	51.0	Peat; very well decomposed; dense and very dark; contains sedge, wood and fibrous roots.
97KFA3534f	Flat	0.0	1.5	Living moss.
97KFA3534f	Flat	1.5	5.0	Peat; well decomposed; very dark.
97KFA3534f	Flat	5.0	15.0	Peat; *Sphagnum;* decomposed; brown; contains ericaceous roots and some sedge.
97KFA3534f	Flat	20.0	50.0	Peat; moderately decomposed; contains some sedge and ericaceous roots.
97KFA3534f	Flat	50.0	75.0	Peat; poorly decomposed; contains fibrous ericaceous roots and some sedge.
97KFA3534f	Flat	75.0	130.0	Peat; contains fibrous ericaceous roots, sedge and wood.
97KFA3534f	Flat	130.0	166.0	Gytjja; light brown; contains wood pieces and fibrous roots.
97KFA3534f	Flat	166.0	198.0	Clay; contains fibric materials.
97KFA3534f	Flat	198.0	200.0	Clay
97KFA3536Ah	Hummock	0.0	4.0	Living *Sphagnum*.
97KFA3536Ah	Hummock	4.0	8.0	*Sphagnum;* recently dead.
97KFA3536Ah	Hummock	8.0	23.0	Peat; *Sphagnum;* poorly decomposed; light brown.
97KFA3536Ah	Hummock	23.0	33.0	Peat; *Sphagnum;* very rooty
97KFA3536Ah	Hummock	33.0	43.0	*Sphagnum;* very well decomposed; dark brown.
97KFA3536h	Hummock	0.0	6.0	Living *Sphagnum;* very fluffy.
97KFA3536h	Hummock	6.0	12.0	*Sphagnum;* recently dead; very fluffy
97KFA3536h	Hummock	12.0	18.0	Peat; *Sphagnum;* very fluffy; yellow to light brown.
97KFA3536h	Hummock	18.0	27.0	Peat; *Sphagnum;* undecomposed; light brown.
97KFA3536h	Hummock	27.0	33.0	Peat; similar to above but wetter, slightly more compact and contains more leaf remnants.
97KFA3536h	Hummock	33.0	41.0	Peat; *Sphagnum* to 40 cm and sedge-rich below 40 cm; brown; contains ericaceous roots.
97KFA3536h	Hummock	41.0	49.0	Peat; decomposed; dark brown.
97KFA3536f	Flat	45.0	58.0	Diamicton.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3537h	Hummock	0.0	4.0	Living, *Sphagnum;* contains leatherleaf leaves.
97KFA3537h	Hummock	4.0	11.0	Peat; *Sphagnum;* fluffy; brown; abundant leatherleaf.
97KFA3537h	Hummock	11.0	14.0	Peat; *Sphagnum;* darker brown than above.
97KFA3537h	Hummock	14.0	20.0	Peat; sedge-rich; darker, denser, and more rooty than above.
97KFA3537h	Hummock	20.0	29.0	Peat; as above except very dark and more decomposed; some ericaceous roots; no *Sphagnum* visible.
97KFA3537h	Hummock	29.0	32.0	Peat; very dark brown; abundant roots and wood.
97KFA3537f	Flat	0.0	2.0	Living green *Sphagnum.*
97KFA3537f	Flat	2.0	6.0	Black decomposed organics with ericaceous roots.
97KFA3537f	Flat	6.0	19.0	Black, mesic peat. Decomposed ericaceous roots and wood.
97KFA3537f	Flat	25.0	50.0	As previous, less wood.
97KFA3537f	Flat	50.0	75.0	As previous, drier and some sedge.
97KFA3537f	Flat	75.0	100.0	As previous with wood pieces.
97KFA3537f	Flat	100.0	120.0	Well decomposed, few fibres. Ericaceous roots and drier.
97KFA3537f	Flat	120.0	140.0	Transition between peat and peaty-clay.
97KFA3537f	Flat	140.0	150.0	Clean, fine grained lacustrine sediment - blue clay.
97KFA3538h	Hummock	0.0	6.0	Living *Sphagnum*
97KFA3538h	Hummock	6.0	10.0	Peat; recently dead *Sphagnum;* yellowish green and light brown
97KFA3538h	Hummock	10.0	13.0	Peat; *Sphagnum;* light brown; contains cocoon-like structure.
97KFA3538h	Hummock	13.0	16.0	Peat; *Sphagnum;* denser than above; brown; some sedge.
97KFA3538h	Hummock	16.0	23.0	Peat; transition between darker brown, more dense *Sphagnum* and wood.
97KFA3539h	Hummock	0.0	4.0	Living *Sphagnum.*
97KFA3539h	Hummock	4.0	11.0	Peat; *Sphagnum;* light brown.
97KFA3539h	Hummock	11.0	19.0	Peat; *Sphagnum;* medium brown; many leaves.
97KFA3539h	Hummock	19.0	28.0	Peat; *Sphagnum;* extremely fluffy; contains woody roots.
97KFA3539h	Hummock	28.0	35.0	Peat; *Sphagnum;* contains ericaceous and woody roots.

Field Descriptions of Peat in Hummock and Hollow Sequences

Site Number/ Sample Type	Sequence Type	Depth (cm)		Sequence Description
		From	To	
97KFA3540h	Hummock	0.0	4.0	Living *Sphagnum.*
97KFA3540h	Hummock	4.0	12.0	*Sphagnum;* recently dead; some *Polytrichum* and leatherleaf leaves.
97KFA3540h	Hummock	12.0	17.0	Peat; *Sphagnum;* darker brown and slightly more decomposed than above; contains ericaceous roots, *Polytrichum* and some leatherleaf leaves.
97KFA3540h	Hummock	17.0	24.0	Peat; darker brown contains abundant *Polytrichum* and ericaceous roots but little *Sphagnum.*
97KFA3540h	Hummock	24.0	29.0	Peat; transition between *Polytrichum* and *Sphagnum* layer below; more decomposed than above; contains leatherleaf leaves and ericaceous roots.
97KFA3540h	Hummock	29.0	34.0	Peat; not sampled.
97KFA3540h	Hummock	34.0	40.0	Peat; moderately decomposed *Sphagnum;* contains ericaceous roots, *Polytrichum* roots, and leatherleaf leaves; denser and lighter brown than above *Polytrichum* layer.
97KFA3540h	Hummock	40.0	44.0	Peat; *Sphagnum;* darker brown than above; overlies wood log; contains ericaceous roots, *Polytrichum,* and rotten wood.
97KFA3540h	Hummock	44.0	50.0	Peat; composed of rotten wood log; rare ericaceous roots.
97KFA3540h	Hummock	50.0	60.0	Peat; moderately decomposed; very dark brown; very dense; some fragments of sedge, ericaceous roots, and wood chips.
97KFA3540f	Flat	0.0	4.0	Living sedge and *Sphagnum*
97KFA3540f	Flat	4.0	23.0	Peat; sedge-rich; black.
97KFA3540f	Flat	32.0	50.0	Peat; very well decomposed; black; contains pieces of wood.
97KFA3540f	Flat	50.0	108.0	Not sampled. (Too wet)
97KFA3540f	Flat	108.0	118.0	Gyttja; gray brown.
97KFA3540f	Flat	118.0	150.0	Peat; well decomposed; black; dry; contains pieces of wood.
97KFA3540f	Flat	150.0	166.0	Peat; well decomposed; black; some ericaceous roots.
97KFA3540f	Flat	166.0	200.0	Peat; well decomposed; black; some sedge-remnants.
97KFA3540f	Flat	200.0	220.0	Peat; very well decomposed; black; ericaceous roots.
97KFA3540f	Flat	220.0	247.0	Peat; well decomposed; contains pieces of wood.
97KFA3540f	Flat	249.0	272.0	Clay; blue-gray.

APPENDIX D

PEAT SAMPLE DESCRIPTIONS

Site Number/Sample Type	Site number with modifier "h" or "f"; "h" indicates sequence from hummock; "f" indicates sequence from flat part of peatland (hollow) adjacent to hummock.
Laboratory Number	Sample number assigned in the laboratory. Hummock sample numbers are designated with "w" or "s". Those samples with "w" are a split of the original sample and are composed of all hummock materials, except for coarse twigs and woody roots which were removed. Those samples with "s" were prepared from another split of the original hummock sample and are composed of hand-picked *Sphagnum* fragments only. Samples from the hollow sequence are designated with "m" and are composed of all peat materials, except for coarse twigs and woody roots.
Sector	Position of the site relative to the compass direction from the smelter
Depth (cm)	Depth from the surface in centimetres
From	Depth at top of sample or core interval in centimetres
To	Depth at base of sample or core interval in centimetres
Moisture % (Wet Wt.)	Per cent water content, based on wet weight of sample
Moisture % (Dry Wt.)	Per cent water content, based on dry weight of sample
Bulk Den (gm/cm3)	Bulk density determination (gm/cm3)
Ash %	Ash remaining in sample after ignition at 500 degrees C.
Munsell Colour	Munsell colour of sample
Munsell or Other Colour Desc	Description of Munsell colour or observed colour

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3500h	97KFA3613s	se	17.2	0.0	2.0	88.9	801.5		2.9	10yr7/7	living green
97KFA3500h	97KFA3614s	se	17.2	2.0	5.0	89.6	864.1		1.2	10yr4/6	dk yellowish brown
97KFA3500h	97KFA3615s	se	17.2	5.0	8.0	89.7	874.6		1.3	7.5yr4/4	brown
97KFA3500h	97KFA3616w	se	17.2	10.0	15.0	89.0	807.9		2.6	7.5yr4/6	strong brown
97KFA3500h	97KFA3617w	se	17.2	15.0	18.0	90.8	984.7		5.3	10yr2/2	v. dk brown
97KFA3500f	97KFA3618f	se	17.2	0.0	3.0	95.0	1905.0		2.9	10yr3/4	dk yellowish brown
97KFA3500f	97KFA3619f	se	17.2	3.0	6.0	93.4	1410.7		3.5	10yr3/2	v. dk greyish brown
97KFA3500f	97KFA3620f	se	17.2	6.0	10.0	93.1	1347.8		6.2	10yr2/1	black
97KFA3500f	97KFA3621f	se	17.2	10.0	15.0	88.5	773.2		10.4	10yr2/1	black
97KFA3500f	97KFA3622f	se	17.2	15.0	19.0	80.7	419.3		33.3	10yr2/1	black
97KFA3503h	97KFA3545s	w	20.7	0.0	3.0	86.0	614.2		3.5	7.5yr6/4	lt brown
97KFA3503h	97KFA3545w	w	20.7	0.0	3.0	86.0	614.2		2.1	7.5yr6/4	lt brown
97KFA3503h	97KFA3546s	w	20.7	3.0	7.0	86.4	636.8		2.2	7.5yr7/6	reddish yellow
97KFA3503h	97KFA3547s	w	20.7	7.0	10.5	86.9	663.7		1.6	7.5yr6/6	reddish yellow
97KFA3503h	97KFA3548s	w	20.7	10.5	13.5	87.6	706.9	0.009	1.3	7.5yr5/6	strong brown
97KFA3503h	97KFA3549s	w	20.7	13.5	17.0	86.8	659.5	0.022	1.3	7.5yr4/4	brown
97KFA3503h	97KFA3549w	w	20.7	13.5	17.0	86.8	659.5	0.022	1.3	7.5yr4/4	brown
97KFA3503h	97KFA3550s	w	20.7	17.0	20.5	87.2	681.2	0.018	1.5	7.5yr4/6	strong brown
97KFA3503h	97KFA3550w	w	20.7	17.0	20.5	87.2	681.2	0.018	1.6	7.5yr4/6	strong brown
97KFA3503h	97KFA3551s	w	20.7	20.5	24.5	87.7	710.5	0.016	2.2	7.5yr4/4	brown
97KFA3503h	97KFA3551w	w	20.7	20.5	24.5	87.7	710.5	0.016	1.8	7.5yr4/4	brown
97KFA3503h	97KFA3552s	w	20.7	24.5	28.5	88.4	762.1	0.019	2.6	7.5yr3/4	dk brown
97KFA3503h	97KFA3552w	w	20.7	24.5	28.5	88.4	762.1	0.019	2.3	7.5yr3/4	dk brown
97KFA3503h	97KFA3553s	w	20.7	28.5	32.5	88.3	754.2		2.8	7.5yr3/2	dk brown
97KFA3503h	97KFA3553w	w	20.7	28.5	32.5	88.3	754.2		2.5	7.5yr3/2	dk brown
97KFA3503f	97KFA3565f	w	20.7	10.0	31.0	91.2	1040.1	0.044	8.6	10yr2/2	v. dk brown
97KFA3503f	97KFA3566f	w	20.7	31.0	60.0	83.7	515.1	0.131	16.9	10yr2/2	v. dk brown
97KFA3503f	97KFA3567f	w	20.7	60.0	89.0	82.9	483.3	0.140	19.4	10yr2/1	black
97KFA3503f	97KFA3568f	w	20.7	89.0	110.0	80.1	403.7	0.179	37.3	10yr2/1	black
97KFA3503f	97KFA3569f	w	20.7	110.0	135.0	81.8	448.2	0.154	45.9	10yr3/1	v. dk grey
97KFA3503f	97KFA3570f	w	20.7	135.0	160.0	78.5	365.7	0.196	60.7	10yr2/1	black
97KFA3503f	97KFA3571f	w	20.7	160.0	175.0	83.5	505.2	0.148	36.6	10yr2/1	black

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3510h	97KFA3725s	n	11.1	0.0	2.0	84.1	528.5		2.0		living green
97KFA3510h	97KFA3726s	n	11.1	2.0	5.0	84.8	556.6	0.014	2.5	10yr6/4	lt yellowish brown
97KFA3510h	97KFA3727s	n	11.1	5.0	8.0	86.1	618.5	0.009	<.01	7.5yr7/6	reddish yellow
97KFA3510h	97KFA3728s	n	11.1	8.0	12.0	86.9	666.2	0.015	1.3	7.5yr5/6	strong brown
97KFA3510h	97KFA3729w	n	11.1	12.0	19.0	88.9	803.6	0.013	1.3	7.5YR6/6	reddish yellow
97KFA3510h	97KFA3730w	n	11.1	19.0	26.0	88.0	730.0	0.010	1.8	7.5yr4/4	brown
97KFA3510h	97KFA3731w	n	11.1	26.0	32.0	88.8	794.6	0.023	2.6	7.5yr3/2	dk brown
97KFA3510f	97KFA3748f	n	11.1	0.0	5.0	83.1	493.2	0.031	5.7	10yr3/1	v. dk grey
97KFA3510f	97KFA3749f	n	11.1	5.0	13.0	87.0	667.6	0.082	12.4	10yr2/1	black
97KFA3510f	97KFA3750f	n	11.1	13.0	19.0	89.6	861.3	0.068	6.0	10yr2/1	black
97KFA3510f	97KFA3751f	n	11.1	20.0	35.0	85.7	597.7	0.130	5.5	10yr2/1	black
97KFA3510f	97KFA3752f	n	11.1	35.0	50.0	82.5	472.0	0.153	10.4	10yr2/1	black
97KFA3510f	97KFA3753f	n	11.1	50.0	63.0	76.6	327.8	0.193	17.1	10yr2/1	black
97KFA3510f	97KFA3754f	n	11.1	63.0	74.0	75.5	307.5	0.203	19.0	10yr2/1	black
97KFA3510f	97KFA3755f	n	11.1	74.0	86.0	75.0	299.5	0.240	20.1	10yr2/1	black
97KFA3510f	97KFA3756f	n	11.1	86.0	96.0	76.3	322.6	0.262	20.1	10yr2/1	black
97KFA3510f	97KFA3757f	n	11.1	96.0	104.0	72.8	267.6	0.298	31.9	10yr2/1	black
97KFA3511h	97KFA3733s	n	33.1	0.0	2.0	90.7	974.4		1.7	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3734s	n	33.1	2.0	4.0	89.3	832.0	0.018	1.0	7.5yr4/6	strong brown
97KFA3511h	97KFA3734w	n	33.1	2.0	4.0	89.3	832.0	0.018	1.2	7.5yr4/6	strong brown
97KFA3511h	97KFA3735s	n	33.1	4.0	10.0	87.6	704.0	0.013	0.5	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3735w	n	33.1	4.0	10.0	87.6	704.0	0.013	1.0	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3736s	n	33.1	10.0	16.0	87.8	722.3	0.015	0.7	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3736w	n	33.1	10.0	16.0	87.8	722.3	0.015	1.1	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3737s	n	33.1	16.0	21.0	86.5	641.9	0.018	0.5	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3737w	n	33.1	16.0	21.0	86.5	641.9	0.018	0.7	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3738s	n	33.1	21.0	28.0	86.3	631.5	0.016	0.6	7.5yr4/4	brown
97KFA3511h	97KFA3738w	n	33.1	21.0	28.0	86.3	631.5	0.016	0.6	7.5yr4/4	brown
97KFA3511h	97KFA3739w	n	33.1	28.0	36.0	85.7	597.7	0.019	0.9	10yr4/4	dk yellowish brown
97KFA3511h	97KFA3740w	n	33.1	36.0	41.0	87.1	674.6	0.019	0.8	10yr4/4	dk yellowish brown
97KFA3511f	97KFA3758f	n	33.1	0.0	9.0	88.6	778.4	0.014	1.5	10yr4/4	dk yellowish brown
97KFA3511f	97KFA3759f	n	33.1	9.0	18.0	90.0	900.7	0.029	1.6	10yr3/3	dk brown
97KFA3511f	97KFA3760f	n	33.1	18.0	25.0	88.8	792.8	0.051	15.6	5yr2.5/1	black
97KFA3511f	97KFA3761f	n	33.1	30.0	50.0	86.7	654.1	0.109	5.1	10yr2/1	black

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3511f	97KFA3762f	n	33.1	50.0	67.0	85.5	589.0	0.113	2.6	10yr2/2	v. dk brown
97KFA3511f	97KFA3763f	n	33.1	67.0	84.0	86.9	664.2	0.121	2.6	10yr2/2	v. dk brown
97KFA3511f	97KFA3764f	n	33.1	84.0	100.0	88.3	754.6	0.106	3.1	10yr2/1	black
97KFA3511f	97KFA3765f	n	33.1	100.0	120.0	89.5	854.1	0.097	5.0	10yr2/2	v. dk brown
97KFA3511f	97KFA3766f	n	33.1	120.0	140.0	88.6	776.6	0.113	8.5	10yr2/1	black
97KFA3511f	97KFA3767f	n	33.1	140.0	150.0	81.0	425.5	0.193	49.0	10yr3/3	dk brown
97KFA3511f	97KFA3768f	n	33.1	150.0	169.0	78.5	366.1	0.220	59.7	10yr3/2	v. dk greyish brown
97KFA3512h	97KFA3554s	w	38.4	0.0	3.0	88.7	782.4		2.3		living green
97KFA3512h	97KFA3555s	w	38.4	3.0	7.0	88.2	750.4		2.6		living green
97KFA3512h	97KFA3556s	w	38.4	7.0	11.0	89.3	832.4		2.4	7.5yr7/6	reddish yellow
97KFA3512h	97KFA3557s	w	38.4	11.0	17.0	89.4	839.7		1.8	7.5y6/4	lt brown
97KFA3512h	97KFA3557w	w	38.4	11.0	17.0	89.4	839.7		2.2	7.5y6/4	lt brown
97KFA3512h	97KFA3558s	w	38.4	17.0	20.0	86.2	625.8		2.6	10yr6/4	lt yellowish brown
97KFA3512h	97KFA3558w	w	38.4	17.0	20.0	86.2	625.8		3.5	10yr6/4	lt yellowish brown
97KFA3514h	97KFA3559s	w	63.1	0.0	3.0	86.6	647.1	0.008	2.6	5y4/4	olive
97KFA3514h	97KFA3560s	w	63.1	3.0	7.0	87.7	716.0	0.005	3.1	7.5yr5/6	strong brown
97KFA3514h	97KFA3561s	w	63.1	7.0	12.0	90.4	946.0	0.003	2.7	7.5yr5/6	strong brown
97KFA3514h	97KFA3562s	w	63.1	12.0	19.0	90.1	909.7	0.007	2.5	7.5yr5/6	strong brown
97KFA3514h	97KFA3562w	w	63.1	12.0	19.0	90.1	909.7	0.007	2.3	7.5yr5/6	strong brown
97KFA3514h	97KFA3563s	w	63.1	19.0	27.0	88.8	795.4	0.008	2.4	7.5yr4/6	strong brown
97KFA3514h	97KFA3563w	w	63.1	19.0	27.0	88.8	795.4	0.008	2.6	7.5yr4/6	strong brown
97KFA3514h	97KFA3564s	w	63.1	27.0	32.0	89.8	881.8		3.2	7.5yr4/4	brown
97KFA3514h	97KFA3564w	w	63.1	27.0	32.0	89.8	881.8		2.8	7.5yr4/4	brown
97KFA3514f	97KFA3574f	w	63.1	0.0	6.0	94.9	1841.9	0.031	3.9	10yr5/4	yellowish brown
97KFA3514f	97KFA3575f	w	63.1	6.0	13.0	77.3	340.0	0.174	7.0	10yr3/2	v. dk greyish brown
97KFA3514f	97KFA3576f	w	63.1	13.0	20.0	92.5	1231.6	0.055	9.5	10yr3/1	v. dk grey
97KFA3514f	97KFA3577f	w	63.1	20.0	50.0	86.7	650.2	0.101	5.2	10yr3/1	v. dk grey
97KFA3514f	97KFA3578f	w	63.1	50.0	78.0	88.2	748.2	0.109	6.3	2.5y2.5/1	black
97KFA3514f	97KFA3579f	w	63.1	78.0	92.0	82.2	461.1	0.243	11.1	2.5y2.5/1	black
97KFA3519h	97KFA3830s	e	61.9	0.0	2.0	89.1	819.5	0.015	2.1	living	living green
97KFA3519h	97KFA3831s	e	61.9	2.0	4.0	89.4	844.8	0.013	1.8	2.5y7/4	pale yellow
97KFA3519h	97KFA3832s	e	61.9	4.0	10.0	90.6	964.8	0.008	1.5	10yr7/4	very pale brown
97KFA3519h	97KFA3833s	e	61.9	10.0	18.0	90.9	992.9	0.006	1.2	10yr7/6	yellow
97KFA3519h	97KFA3834s	e	61.9	18.0	26.0	90.5	955.8	0.008	0.9	10yr7/6	yellow

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3519h	97KFA3834w	e	61.9	18.0	26.0	90.5	955.8	0.008	1.1	10yr7/6	yellow
97KFA3519h	97KFA3835w	e	61.9	26.0	33.0	90.0	901.4		1.4	10yr6/4	lt yellowish brown
97KFA3519h	97KFA3836w	e	61.9	33.0	41.0	88.7	787.7	0.013	1.2	10yr6/4	lt yellowish brown
97KFA3519h	97KFA3837w	e	61.9	41.0	50.0	90.6	967.8	0.011	1.4	10yr7/4	very pale brown
97KFA3519h	97KFA3838w	e	61.9	50.0	58.0	89.9	892.2	0.016	1.6	10yr4/4	dk yellowish brown
97KFA3519h	97KFA3839w	e	61.9	58.0	66.0	90.2	922.3		2.1	10yr3/1	v. dk grey
97KFA3520h	97KFA3623s	se	62.6	0.0	3.0	88.0	736.1	0.013	2.1	5y7/6	yellow
97KFA3520h	97KFA3624s	se	62.6	3.0	7.0	87.8	721.5	0.007	2.7	10yr7/4	very pale brown
97KFA3520h	97KFA3625s	se	62.6	7.0	11.0	85.7	598.4	0.010	2.8	10yr6/6	brownish yellow
97KFA3520h	97KFA3626s	se	62.6	11.0	16.0	87.4	695.3	0.017	2.0	10yr6/6	brownish yellow
97KFA3520h	97KFA3626w	se	62.6	11.0	16.0	87.4	695.3	0.017	2.0	10yr6/6	brownish yellow
97KFA3520h	97KFA3627s	se	62.6	16.0	23.0	89.0	812.3	0.019	1.8	10yr6/6	brownish yellow
97KFA3520h	97KFA3627w	se	62.6	16.0	23.0	89.0	812.3	0.019	2.3	10yr6/6	brownish yellow
97KFA3520h	97KFA3628s	se	62.6	23.0	28.0	89.9	891.3	0.030	1.5	10yr7/6	yellow
97KFA3520h	97KFA3628w	se	62.6	23.0	28.0	89.9	891.3	0.030	1.9	10yr7/6	yellow
97KFA3520h	97KFA3629s	se	62.6	28.0	33.0	88.6	777.1	0.037	1.7	10yr6/4	lt yellowish brown
97KFA3520h	97KFA3629w	se	62.6	28.0	33.0	88.6	777.1	0.037	1.6	10yr6/4	lt yellowish brown
97KFA3520h	97KFA3630w	se	62.6	33.0	38.0	88.3	752.0	0.075	1.5	10yr3/3,	dk brown
97KFA3520h	97KFA3631w	se	62.6	38.0	47.0	82.8	481.6	0.032	3.6	10yr5/4,	yellowish brown
97KFA3520h	97KFA3634w	se	62.6	42.0	44.0	78.8	371.3	0.105	3.5	10yr3/2,	v. dk greyish brown
97KFA3520h	97KFA3632w	se	62.6	47.0	57.0	89.4	842.2	0.046	1.1	10yr4/4,	dk yellowish brown
97KFA3520h	97KFA3633w	se	62.6	57.0	63.0	83.4	501.5		1.5	10yr5/4,	yellowish brown
97KFA3521h	97KFA3665s	se	78.8	0.0	3.0	86.8	656.7		2.7	7.5yr4/4	brown
97KFA3521h	97KFA3666s	se	78.8	3.0	6.0	88.1	739.0	0.015	3.0	7.5yr4/4	brown
97KFA3521h	97KFA3667s	se	78.8	6.0	11.0	89.2	822.9	0.010	1.8	7.5yr4/4	brown
97KFA3521h	97KFA3668s	se	78.8	11.0	18.0	89.4	842.6	0.013	2.1	7.5yr4/6	strong brown
97KFA3521h	97KFA3668w	se	78.8	11.0	18.0	89.4	842.6	0.013	2.7	7.5yr4/6	strong brown
97KFA3521h	97KFA3669s	se	78.8	18.0	23.0	90.0	895.6	0.010	3.6	7.5yr4/4	brown
97KFA3521h	97KFA3669w	se	78.8	18.0	23.0	90.0	895.6	0.010	3.6	7.5yr4/4	brown
97KFA3521h	97KFA3670s	se	78.8	23.0	30.0	90.2	925.4	0.009	2.6	7.5yr4/4	brown
97KFA3521h	97KFA3670w	se	78.8	23.0	30.0	90.2	925.4	0.009	3.0	7.5yr4/4	brown
97KFA3521h	97KFA3671s	se	78.8	30.0	35.0	91.9	1131.2	0.018	1.5	7.5yr5/2	brown
97KFA3521h	97KFA3671w	se	78.8	30.0	35.0	91.9	1131.2	0.018	2.1	7.5yr5/2	brown
97KFA3521h	97KFA3672w	se	78.8	35.0	40.0	93.7	1475.8		2.8	7.5yr3/2	dk brown

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3522h	97KFA3686s	se	73.2	0.0	4.0	87.2	683.4	0.007	9.9	5y6/6	olive yellow
97KFA3522f	97KFA3779f	se	73.2	4.0	8.0	83.9	520.7	0.010		10yr7/4	very pale brown
97KFA3522h	97KFA3687s	se	73.2	8.0	13.0	83.6	509.2	0.011	19.9	10yr6/3	pale brown
97KFA3522h	97KFA3688s	se	73.2	13.0	21.0	84.6	550.1	0.008	14.6	10yr4/3	brown
97KFA3522h	97KFA3689s	se	73.2	21.0	32.0	85.1	569.4	0.016	19.5	10yr5/3	brown
97KFA3522h	97KFA3690w	se	73.2	32.0	40.0	87.2	678.7	0.022	22.0	10yr4/4	dk yellowish brown
97KFA3522h	97KFA3691w	se	73.2	40.0	48.0	86.2	622.3		27.6	10yr3/2	v. dk greyish brown
97KFA3522h	97KFA3692w	se	73.2	48.0	60.0	89.0	809.6		11.5	10yr2/2	v. dk brown
97KFA3522h	97KFA3693w	se	73.2	60.0	73.0	89.7	867.0	0.029	2.7	10yr2/1	black
97KFA3522f	97KFA3778f	se	73.2	0.0	4.0	83.3	500.1	0.119	14.7	10yr4/4	dk yellowish brown
97KFA3522f	97KFA3780f	se	73.2	8.0	14.0	87.2	678.6	0.072	22.4	10yr2/2	v. dk brown
97KFA3522f	97KFA3781f	se	73.2	14.0	20.0	88.9	797.1	0.066	12.3	10yr2/2	v. dk brown
97KFA3522f	97KFA3782f	se	73.2	24.0	34.0	90.1	908.6	0.066	2.0	10yr3/2	v. dk greyish brown
97KFA3522f	97KFA3783f	se	73.2	34.0	50.0	83.7	513.4	0.137	5.1	10yr2/2	v. dk brown
97KFA3522f	97KFA3784f	se	73.2	50.0	75.0	84.1	528.5	0.124	5.0	10yr2/1	black
97KFA3522f	97KFA3785f	se	73.2	75.0	100.0	89.1	816.0	0.108	3.7	10yr2/2	v. dk brown
97KFA3522f	97KFA3786f	se	73.2	100.0	106.0	84.7	551.5	0.170	26.1	10yr2/2	v. dk brown
97KFA3523h	97KFA3850s	s	58.1	0.0	4.0	90.3	933.7	0.007	2.8	living	living green
97KFA3523h	97KFA3851w	s	58.1	4.0	11.0	89.9	888.5	0.005	2.3	7.5yr5/6	strong brown
97KFA3523h	97KFA3852w	s	58.1	11.0	17.0	90.9	997.0	0.006	2.1	7.5yr6/6	reddish yellow
97KFA3523h	97KFA3853w	s	58.1	17.0	23.0	90.6	964.3	0.014	1.8	7.5yr3/4	dk brown
97KFA3523h	97KFA3854w	s	58.1	23.0	29.0	91.6	1092.2	0.024	2.0	7.5yr4/4	brown
97KFA3523h	97KFA3855w	s	58.1	29.0	34.0	93.3	1392.0		3.1	7.5yr3/2	dk brown
97KFA3525h	97KFA3656s	se	29.5	0.0	2.0	87.2	684.2		2.5	7.5yr6/6	reddish yellow
97KFA3525h	97KFA3657s	se	29.5	2.0	6.0	87.4	695.4	0.008	2.3	7.5yr5/6	strong brown
97KFA3525h	97KFA3658s	se	29.5	6.0	11.0	87.8	718.8	0.010	2.0	7.5yr5/6	strong brown
97KFA3525h	97KFA3659s	se	29.5	11.0	14.0	87.5	700.4	0.029	1.6	7.5yr5/6	strong brown
97KFA3525h	97KFA3660s	se	29.5	14.0	22.0	87.2	680.4	0.015	1.1	10yr4/6	dk yellowish brown
97KFA3525h	97KFA3661s	se	29.5	22.0	29.0	87.1	675.5	0.020	1.0	7.5yr4/6	strong brown
97KFA3525h	97KFA3661w	se	29.5	22.0	29.0	87.1	675.5	0.020	1.2	7.5yr4/6	strong brown
97KFA3525h	97KFA3662s	se	29.5	29.0	37.0	86.2	625.1	0.022	0.8	10yr4/6	dk yellowish brown
97KFA3525h	97KFA3662w	se	29.5	29.0	37.0	86.2	625.1	0.022	1.1	10yr4/6	dk yellowish brown
97KFA3525h	97KFA3663w	se	29.5	37.0	45.0	90.1	912.7	0.022	1.5	7.5yr5/6	strong brown
97KFA3525h	97KFA3664w	se	29.5	45.0	52.0	91.2	1037.3	0.033	2.7	7.5yr3/2	dk brown

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3526h	97KFA3607s	se	35.4	0.0	4.0	88.4	762.8	0.009	3.1	10yr7/4	very pale brown
97KFA3526h	97KFA3608s	se	35.4	4.0	11.0	89.3	831.3	0.007	2.2	10yr6/6	brownish yellow
97KFA3526h	97KFA3609s	se	35.4	11.0	16.0	88.2	746.6	0.015	1.5	5yr5/6	yellowish red
97KFA3526h	97KFA3610s	se	35.4	16.0	22.0	89.9	889.1	0.018	1.5	7.5yr5/6	strong brown
97KFA3526h	97KFA3611s	se	35.4	22.0	27.0	94.8	1832.4	0.033	1.5	7.5yr5/4	brown
97KFA3526h	97KFA3611w	se	35.4	22.0	27.0	94.8	1832.4	0.033	1.5	7.5yr5/4	brown
97KFA3526h	97KFA3612s	se	35.4	27.0	32.0	96.1	2472.5		1.6	7.5yr5/4	brown
97KFA3526h	97KFA3612w	se	35.4	27.0	32.0	96.1	2472.5		1.7	7.5yr5/4	brown
97KFA3526f	97KFA3603f	se	35.4	0.0	7.0	93.3	1381.6	0.019	2.5	10yr5/4	yellowish brown
97KFA3526f	97KFA3604f	se	35.4	7.0	19.0	93.2	1373.3		2.2	10yr6/3	pale brown
97KFA3526f	97KFA3605f	se	35.4	19.0	32.0	92.1	1161.7		4.4	10yr3/2	v. dk greyish brown
97KFA3526f	97KFA3606f	se	35.4	32.0	50.0	92.6	1256.4	0.046	3.4	10yr3/4	dk yellowish brown
97KFA3527h	97KFA3840s	e	15.2	0.0	7.0	84.6	550.2		1.7	10yr7/6	yellow
97KFA3527h	97KFA3841s	e	15.2	7.0	12.0	89.4	840.7	0.008	1.6	10yr6/6	brownish yellow
97KFA3527h	97KFA3842s	e	15.2	12.0	19.0	89.1	817.2	0.008	1.9	10yr6/6	brownish yellow
97KFA3527h	97KFA3843s	e	15.2	19.0	25.0	90.1	913.4	0.011	1.6	7.5yr6/6	reddish yellow
97KFA3527h	97KFA3844w	e	15.2	25.0	32.0	91.2	1036.0	0.013	2.5	10yr4/3.	brown
97KFA3527h	97KFA3845w	e	15.2	32.0	38.0	90.6	963.9	0.041	4.6	10yr3/2	v. dk greyish brown
97KFA3527h	97KFA3846w	e	15.2	38.0	45.0	87.8	718.9		11.8	10yr2/1	black
97KFA3527f	97KFA3847f	e	15.2	0.0	7.0	95.7	2213.1	0.018	1.7	10yr4/3	brown
97KFA3527f	97KFA3848f	e	15.2	7.0	14.0	95.6	2171.2	0.016	6.4	10yr3/3	dk brown
97KFA3527f	97KFA3849f	e	15.2	14.0	25.0	89.0	805.1		12.4	10yr2/1	black
97KFA3528h	97KFA3716s	n	57.6	0.0	3.0	87.3	685.6	0.014	4.0	living	green
97KFA3528h	97KFA3717s	n	57.6	3.0	7.0	87.9	725.8	0.009	3.7	7.5yr4/4	brown
97KFA3528h	97KFA3718s	n	57.6	7.0	12.0	88.9	798.0	0.013	5.2	7.5yr5/4	brown
97KFA3528h	97KFA3719s	n	57.6	12.0	19.0	88.0	736.7	0.010	9.6	10yr5/6	yellowish brown
97KFA3528h	97KFA3720s	n	57.6	19.0	26.0	88.7	786.9	0.013	4.6	7.5yr4/4	brown
97KFA3528h	97KFA3721s	n	57.6	26.0	34.0	89.9	889.6	0.012	5.6	7.5yr5/4	brown
97KFA3528h	97KFA3722w	n	57.6	34.0	40.0	91.0	1009.4	0.017	4.6	7.5yr4/4	brown
97KFA3528h	97KFA3723w	n	57.6	40.0	49.0	91.5	1075.6		4.3	7.5yr3/2	dk brown
97KFA3528h	97KFA3724w	n	57.6	49.0	58.0	90.7	980.8		6.4	5yr2.5/1	black

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3528f	97KFA3809f	n	57.6	0.0	7.0	90.9	999.2	0.016	4.1	7.5yr4/4	brown
97KFA3528f	97KFA3810f	n	57.6	7.0	14.0	92.9	1316.3	0.028	5.7	5yr3/2	dk reddish bown
97KFA3528f	97KFA3811f	n	57.6	14.0	19.0	93.3	1399.5	0.044	7.1	5yr4/2	dk reddish gray
97KFA3528f	97KFA3812f	n	57.6	20.0	35.0	86.8	660.2	0.109	7.3	5yr2.5/1	black
97KFA3528f	97KFA3813f	n	57.6	35.0	50.0	84.3	535.7	0.128	8.6	5yr2.5/1	black
97KFA3528f	97KFA3814f	n	57.6	50.0	70.0	84.7	555.3	0.101	6.0	5yr2.5/1	black
97KFA3528f	97KFA3815f	n	57.6	70.0	94.0	76.8	331.9	0.194	15.2	10yr2/1	black
97KFA3529h	97KFA3741s	n	80.8	0.0	3.0	89.3	833.8	0.013	3.9	7.5yr6/6	reddish yellow
97KFA3529h	97KFA3742s	n	80.8	3.0	8.0	89.8	877.7	0.016	8.7	7.5yr5/4	brown
97KFA3529h	97KFA3743s	n	80.8	8.0	12.0	90.5	950.9	0.021	6.4	7.5yr4/4	brown
97KFA3529h	97KFA3744w	n	80.8	12.0	20.0	91.2	1035.6	0.017	6.3	7.5yr4/4	brown
97KFA3529h	97KFA3745w	n	80.8	20.0	27.0	92.5	1234.2	0.026	5.9	7.5yr4/6	strong brown
97KFA3529h	97KFA3746w	n	80.8	27.0	32.0	93.5	1434.8	0.055	6.7	7.5yr3/2	dk brown
97KFA3529h	97KFA3747w	n	80.8	32.0	37.0			0.050	4.8	7.5yr3/2	dk brown
97KFA3529f	97KFA3802f	n	80.8	0.0	11.0	92.7	1261.3	0.031	11.6	7.5yr3/2	dk brown
97KFA3529f	97KFA3803f	n	80.8	9.0	34.0	87.7	713.8	0.058	10.8	10yr3/1	v. dk grey
97KFA3529f	97KFA3804f	n	80.8	34.0	50.0	81.7	447.3	0.151	8.6	5yr2.5/1	black
97KFA3529f	97KFA3805f	n	80.8	50.0	75.0	81.7	446.2	0.157	9.3	5yr2.5/1	black
97KFA3529f	97KFA3806f	n	80.8	75.0	100.0	83.3	498.9	0.151	7.7	5yr2.5/1	black
97KFA3529f	97KFA3807f	n	80.8	100.0	128.0	84.6	547.8	0.122	8.7	N2/0	black
97KFA3529f	97KFA3808f	n	80.8	128.0	140.0	82.6	476.2	0.164	22.7	N2/0	black
97KFA3530h	97KFA3821f	nw	91.7	0.0	5.0	88.2	749.1		2.5		living green
97KFA3530h	97KFA3822s	nw	91.7	5.0	11.0	89.1	818.2	0.007	3.3	7.5yr4/6	strong brown
97KFA3530h	97KFA3823s	nw	91.7	11.0	17.0			0.009	1.8	7.5yr4/6	strong brown
97KFA3530h	97KFA3824s	nw	91.7	17.0	24.0	90.2	920.4	0.016	1.5	7.5yr7/6	reddish yellow
97KFA3530h	97KFA3824w	nw	91.7	17.0	24.0	90.2	920.4	0.016	1.5	7.5yr7/6	reddish yellow
97KFA3530h	97KFA3825w	nw	91.7	24.0	32.0			0.018	1.8	7.5yr4/6	strong brown
97KFA3530h	97KFA3826w	nw	91.7	32.0	36.0	90.7	970.7	0.038	5.0	7.5yr3/2	dk brown
97KFA3530h	97KFA3827w	nw	91.7	36.0	42.0	84.5	543.8	0.042	7.9	7.5yr3/4	dk brown
97KFA3530h	97KFA3828w	nw	91.7	42.0	48.0	90.6	959.6	0.054	3.5	10yr2/1	black
97KFA3530h	97KFA3829w	nw	91.7	48.0	54.0	93.1	1346.0	0.078	2.9	10yr2/1	black

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm)		Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
				From	To						
97KFA3530f	97KFA3816f	nw	91.7	0.0	8.0	87.5	698.4	0.024	8.2	5yr2.5/2	dk reddish bown
97KFA3530f	97KFA3817f	nw	91.7	8.0	20.0	88.0	730.2	0.072	3.4	5yr2.5/2	dk reddish bown
97KFA3530f	97KFA3818f	nw	91.7	24.0	30.0	82.1	460.2	0.345	8.0	5yr2.5/1	black
97KFA3530f	97KFA3819f	nw	91.7	30.0	50.0	78.7	369.9	0.165	8.1	5yr2.5/1	black
97KFA3530f	97KFA3820f	nw	91.7	50.0	54.0	81.3	433.8	0.168	18.6	5yr2.5/1	black
97KFA3533h	97KFA3694s	w	9.8	0.0	5.0	84.4	542.0	0.005	1.9		living green
97KFA3533h	97KFA3695s	w	9.8	5.0	7.5	84.0	525.1		1.8	10yr7/6	yellow
97KFA3533h	97KFA3696s	w	9.8	7.5	14.0	85.8	604.9	0.010	1.4	10yr5/6	yellowish brown
97KFA3533h	97KFA3697s	w	9.8	14.0	17.0	84.3	538.9		not/ss	10yr5/4	yellowish brown
97KFA3533h	97KFA3698w	w	9.8	17.0	25.0	85.9	608.9	0.004	1.6	10yr3/6	dk yellowish brown
97KFA3533h	97KFA3699w	w	9.8	25.0	33.0	85.0	566.1	0.014	1.8	10yr4/6	dk yellowish brown
97KFA3533h	97KFA3700w	w	9.8	33.0	40.0	84.8	557.8		1.9	10yr3/4	dk yellowish brown
97KFA3533h	97KFA3701w	w	9.8	40.0	48.0	87.2	681.7	0.013	2.2	7.5yr3/4	dk brown
97KFA3533h	97KFA3702w	w	9.8	48.0	52.0	89.7	870.3	0.043	2.7	10yr3/4	dk yellowish brown
97KFA3533h	97KFA3703w	w	9.8	52.0	56.0	85.9	608.0	0.065	5.4	5yr2.5/2	dk reddish bown
97KFA3533h	97KFA3704w	w	9.8	56.0	60.0	86.4	637.4	0.090	6.5	10yr2/1	black
97KFA3533h	97KFA3705w	w	9.8	60.0	67.0	85.7	598.0		5.6	10yr2/1	black
97KFA3533f	97KFA3787f	w	9.8	0.0	5.0	75.8	313.5	0.064	6.6		living green
97KFA3533f	97KFA3788f	w	9.8	5.0	7.5	81.4	438.4	0.076	10.7		black
97KFA3533f	97KFA3789f	w	9.8	7.5	10.0	83.9	519.2	0.119	5.8		black
97KFA3533f	97KFA3790f	w	9.8	8.0	30.0	82.3	466.5	0.112	5.9	5yr2.5/1	black
97KFA3533f	97KFA3791f	w	9.8	30.0	50.0	81.8	450.2	0.147	6.7	5yr2.5/1	black
97KFA3533f	97KFA3792f	w	9.8	50.0	75.0	83.3	497.9	0.144	7.3	5yr2.5/1	black
97KFA3533f	97KFA3793f	w	9.8	75.0	100.0	85.7	597.4	0.136	9.1	5yr2.5/1	black
97KFA3533f	97KFA3794f	w	9.8	100.0	111.0	86.3	627.4	0.130	9.2	5yr2.5/1	black
97KFA3533f	97KFA3795f	w	9.8	111.0	115.0	47.1	88.9	0.421	6.8	5yr2.5/2	dk reddish bown
97KFA3533f	97KFA3796f	w	9.8	115.0	127.0	84.8	558.2	0.148	13.4	5yr2.5/1	black
97KFA3533f	97KFA3797f	w	9.8	127.0	152.0	79.9	397.4	0.160	26.5	5yr2.5/1	black
97KFA3533f	97KFA3798f	w	9.8	152.0	177.0	79.1	377.8	0.191	27.7	5yr2.5/1	black
97KFA3533f	97KFA3799f	w	9.8	177.0	202.0	82.6	473.6	0.154	27.9	5yr2.5/1	black
97KFA3533f	97KFA3800f	w	9.8	202.0	227.0	87.1	676.2	0.106	14.0		
97KFA3533f	97KFA3801f	w	9.8	227.0	238.0	80.2	406.1	0.149	39.4		

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	Depth (cm) To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3534h	97KFA3706s	w	8.6	0.0	3.0	84.8	557.5		2.0	7.5yr6/6	reddish yellow
97KFA3534h	97KFA3707s	w	8.6	3.0	5.0	86.6	647.8	0.024	2.0	7.5yr6/4	lt brown
97KFA3534h	97KFA3708s	w	8.6	5.0	9.0	87.1	673.7	0.016	1.8	7.5yr5/6	strong brown
97KFA3534h	97KFA3709w	w	8.6	9.0	13.0	85.4	583.9	0.018	1.9	7.5yr4/4	brown
97KFA3534h	97KFA3710w	w	8.6	13.0	19.0	83.1	493.0	0.020	3.3	7.5yr3/2	dk brown
97KFA3534h	97KFA3711w	w	8.6	19.0	27.0	85.2	573.9	0.033	6.0	7.5yr3/4	dk brown
97KFA3534h	97KFA3712w	w	8.6	27.0	33.0	87.9	724.8		14.9	7.5yr3/4	dk brown
97KFA3534h	97KFA3713w	w	8.6	33.0	40.0	90.8	990.7		11.8	7.5yr4/2	brown
97KFA3534h	97KFA3714w	w	8.6	40.0	46.0	90.8	981.8	0.070	6.0	7.5yr3/2	dk brown
97KFA3534h	97KFA3715w	w	8.6	46.0	51.0	86.8	656.2		4.1	10yr2/2	v. dk brown
97KFA3534f	97KFA3769f	w	8.6	0.0	15.0	93.0	1335.6	0.044	9.0	10yr3/3	dk brown
97KFA3534f	97KFA3770f	w	8.6	20.0	35.0	83.9	522.6	0.130	2.5	10yr2/2	v. dk brown
97KFA3534f	97KFA3771f	w	8.6	35.0	50.0	84.8	557.8	0.129	2.5	10yr2/1	black
97KFA3534f	97KFA3772f	w	8.6	50.0	75.0	86.4	636.2	0.118	2.7	10yr3/1	v. dk grey
97KFA3534f	97KFA3773f	w	8.6	75.0	100.0	89.8	879.7	0.089	2.2	10yr2/2	v. dk brown
97KFA3534f	97KFA3774f	w	8.6	100.0	130.0	91.1	1018.2	0.066	4.5	10yr3/1	v. dk grey
97KFA3534f	97KFA3775f	w	8.6	130.0	150.0	90.9	996.8	0.084	33.2	10yr3/2	v. dk greyish brown
97KFA3534f	97KFA3776f	w	8.6	150.0	166.0	89.7	868.4	0.093	42.3	10yr4/2	dk grayish brown
97KFA3534f	97KFA3777f	w	8.6	166.0	198.0	87.1	678.2	0.117	52.2	10yr4/1	dk gray
97KFA3536Ah	97KFA3680s	nw	7.1	0.0	4.0	84.7	552.1	0.014	1.9		living green
97KFA3536Ah	97KFA3681s	nw	7.1	4.0	8.0	87.5	703.2	0.008	3.1	10yr6/6	brownish yellow
97KFA3536Ah	97KFA3682s	nw	7.1	8.0	18.0	89.0	810.2	0.005	2.6	10yr5/3	brown
97KFA3536Ah	97KFA3683s	nw	7.1	18.0	23.0	88.2	748.4	0.010	2.4	10yr5/4	yellowish brown
97KFA3536Ah	97KFA3684w	nw	7.1	23.0	28.0	90.1	909.2		6.0	10yr3/3	dk brown
97KFA3536Ah	97KFA3685w	nw	7.1	33.0	43.0	81.8	450.0		44.8	10yr2/1	black
97KFA3536h	97KFA3673s	nw	7.1	0.0	6.0	84.4	540.7		1.6		living green
97KFA3536h	97KFA3674s	nw	7.1	6.0	12.0	88.5	769.6	0.004	4.5	10yr6/6	brownish yellow
97KFA3536h	97KFA3675s	nw	7.1	12.0	18.0	89.6	865.2		3.4	10yr6/6	brownish yellow
97KFA3536h	97KFA3676s	nw	7.1	18.0	27.0	90.9	1001.4	0.004	3.6	10yr6/6	brownish yellow
97KFA3536h	97KFA3677s	nw	7.1	27.0	33.0	91.8	1116.5	0.025	4.6	10yr6/6	brownish yellow
97KFA3536h	97KFA3677w	nw	7.1	27.0	33.0	91.8	1116.5	0.025	5.2	10yr6/6	brownish yellow
97KFA3536h	97KFA3678w	nw	7.1	33.0	41.0	91.9	1141.4	0.023	9.2	10yr3/3	dk brown
97KFA3536h	97KFA3679w	nw	7.1	41.0	49.0	92.0	1157.8		13.6	10yr2/1	black

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm) From	To	Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
97KFA3537h	97KFA3580s	se	11.9	0.0	4.0	86.9	663.9		1.1	5y6/6	olive yellow
97KFA3537h	97KFA3581s	se	11.9	4.0	11.0	86.5	642.5	0.005	2.2	5y6/8	olive yellow
97KFA3537h	97KFA3582s	se	11.9	11.0	14.0	86.2	624.9	0.008	2.4	2.5y 5/4	lt olive brown
97KFA3537h	97KFA3583w	se	11.9	14.0	20.0	77.2	337.8		5.9	10yr3/3	dk brown
97KFA3537h	97KFA3584w	se	11.9	20.0	29.0	83.9	519.5	0.033	9.5	10yr2/2	v. dk brown
97KFA3537h	97KFA3585w	se	11.9	29.0	32.0	88.4	761.5		7.6	10yr2/1	black
97KFA3537f	97KFA3586f	se	11.9	0.0	6.0	95.1	1960.8	0.016	5.7		living green
97KFA3537f	97KFA3587f	se	11.9	6.0	19.0	90.0	897.0		6.1	10yr2/2	v. dk brown
97KFA3537f	97KFA3588f	se	11.9	25.0	50.0	85.0	566.0	0.083	6.8	10yr2/1	black
97KFA3537f	97KFA3589f	se	11.9	50.0	75.0	79.9	396.6	0.161	15.1	10yr2/1	black
97KFA3537f	97KFA3590f	se	11.9	75.0	100.0	81.8	448.9	0.158	15.0	10yr2/1	black
97KFA3537f	97KFA3591f	se	11.9	100.0	120.0	85.0	566.4	0.118	12.4	10yr2/1	black
97KFA3537f	97KFA3592f	se	11.9	120.0	131.0			0.149	6.8	10yr2/1	black
97KFA3538h	97KFA3593s	s	9.6	0.0	6.0	90.3	932.8		2.2		living green
97KFA3538h	97KFA3594s	s	9.6	6.0	10.0	91.4	1060.1	0.003	5.2	5y6/6	olive yellow
97KFA3538h	97KFA3595s	s	9.6	10.0	13.0	92.2	1174.3	0.009	3.5	10yr6/6	brownish yellow
97KFA3538h	97KFA3596s	s	9.6	13.0	16.0	90.3	927.3	0.014	6.8	10yr4/4	dk yellowish brown
97KFA3538h	97KFA3597s	s	9.6	16.0	23.0	88.9	802.1	0.012	20.0	10yr3/3	dk brown
97KFA3539h	97KFA3598s	s	10.4	0.0	4.0	84.6	547.3	0.007	2.1	living	living green
97KFA3539h	97KFA3599s	s	10.4	4.0	11.0	85.6	593.9	0.007	1.7	10yr5/4	yellowish brown
97KFA3539h	97KFA3600s	s	10.4	11.0	19.0	88.7	784.6	0.006	1.5	10yr4/4	dk yellowish brown
97KFA3539h	97KFA3601s	s	10.4	19.0	28.0	91.0	1012.0		2.8	10yr3/3	dk brown
97KFA3540h	97KFA3635s	sw	11.6	0.0	4.0	87.2	681.1	0.007	2.0	5y6/8	olive yellow
97KFA3540h	97KFA3636s	sw	11.6	4.0	12.0	85.9	611.6	0.003	2.0	10yr6/4	lt yellowish brown
97KFA3540h	97KFA3637w	sw	11.6	12.0	17.0	84.3	537.4	0.011	2.3	10yr5/4	yellowish brown
97KFA3540h	97KFA3638w	sw	11.6	17.0	24.0	75.5	308.5		3.3	10yr3/4	dk yellowish brown
97KFA3540h	97KFA3639w	sw	11.6	24.0	29.0	82.2	461.2	0.022	7.4	10yr3/4	dk yellowish brown
97KFA3540h	97KFA3640w	sw	11.6	34.0	40.0	87.9	727.3		5.8	10yr3/4	dk yellowish brown
97KFA3540h	97KFA3641w	sw	11.6	40.0	44.0	89.1	819.6	0.046	5.1	10yr5/4	yellowish brown
97KFA3540h	97KFA3642w	sw	11.6	44.0	50.0	82.9	483.7		1.6	5yr3/4	dk reddish bown
97KFA3540h	97KFA3643w	sw	11.6	50.0	60.0	84.2	533.9	0.086	6.8	10yr10/1	

Peat Sample Descriptions

Site Number/ Sample Type	Laboratory Number	Sector	Dist (km)	Depth (cm)		Moisture % Wet Wt.	Moisture % Dry Wt	Bulk Den (gm/cm3)	Ash %	Munsell Colour	Munsell or Other Colour Desc
				From	To						
97KFA3540f	97KFA3644f	sw	11.6	0.0	4.0	81.0	427.3	0.094	12.6	10yr3/2	v. dk greyish brown
97KFA3540f	97KFA3645f	sw	11.6	4.0	10.0	83.8	517.5	0.080	11.3	10yr3/2	v. dk greyish brown
97KFA3540f	97KFA3646f	sw	11.6	10.0	15.0	86.5	642.9	0.161	5.9	10yr2/1	black
97KFA3540f	97KFA3647f	sw	11.6	15.0	23.0	84.9	562.8		6.7	10yr2/1	black
97KFA3540f	97KFA3648f	sw	11.6	32.0	50.0	84.0	524.3	0.104	12.9	10yr2/1	black
97KFA3540f	97KFA3649f	sw	11.6	108.0	118.0	68.7	219.0	0.274	45.9	10yr2/1	black
97KFA3540f	97KFA3650f	sw	11.6	118.0	150.0	74.8	296.2	0.209	30.0	10yr2/1	black
97KFA3540f	97KFA3651f	sw	11.6	150.0	166.0	79.0	377.0	0.183	26.0	10yr2/1	black
97KFA3540f	97KFA3652f	sw	11.6	166.0	200.0	85.4	582.8	0.138	19.3	10yr2/1	black
97KFA3540f	97KFA3653f	sw	11.6	200.0	220.0	86.0	613.9	0.126	16.2	10yr2/1	black
97KFA3540f	97KFA3654f	sw	11.6	220.0	240.0	87.0	669.5	0.123	14.5	10yr2/1	black
97KFA3540f	97KFA3655f	sw	11.6	240.0	247.0	84.6	548.8	0.140	21.8	N2/0	black

APPENDIX E

GEOCHEMICAL DATA FOR PEAT, FEATHER MOSS, AND SEDIMENT SAMPLES

Site Number/Sample Type	Site number with modifier "h" or "f"; "h" indicates sequence from hummock; "f" indicates sequence from flat part of peatland (hollow) adjacent to hummock.
Laboratory Number	Sample number assigned in the laboratory. Hummock sample numbers are designated with "w" or "s". Those samples with "w" are a split of the original sample and are composed of all hummock materials, except for coarse twigs and woody roots which were removed. Those samples with "s" were prepared from another split of the original hummock sample and are composed of hand-picked Sphagnum fragments only. Samples from the hollow sequence are designated with "m" and are composed of all peat materials, except for coarse twigs and woody roots.
Sector	Position of the site relative to the compass direction from the smelter
Dist (km)	Distance from the smelter in kilometres
Depth (cm)	Depth from the surface in centimetres
From	Depth at top of sample or core interval in centimetres
To	Depth at base of sample or core interval in centimetres

APPENDIX E (cont.)

GEOCHEMICAL DATA FOR PEAT, FEATHER MOSS, AND SEDIMENT SAMPLES

ICP-AES DATA

Element	Unit	Element Name	Lower Detection Limit	Upper Detection Limit
Ag	ppm	Silver	0.10	100
Al	ppm	Aluminium	50	100000
As	ppm	Arsenic	2	10000
Ba	ppm	Barium	5	10000
Ca	pct	Calcium	0.005	10
Cd	ppm	Cadmium	0.2	100
Co	ppm	Cobalt	0.50	10000
Cr	ppm	Chromium	0.5	10000
Cu	ppm	Copper	0.50	10000
Fe	pct	Iron	0.005	10
K	pct	Potassium	0.005	1.00
Mg	pct	Magnesium	0.005	10
Mn	ppm	Manganese	1	10000
Mo	ppm	Molybdenum	0.50	10000
Na	ppm	Sodium	50	50000
Ni	ppm	Nickel	0.50	10000
P	ppm	Phosphorus	5	10000
Pb	ppm	Lead	0.50	10000
Sb	ppm	Antimony	2	10000
Sr	ppm	Strontium	0.50	10000
Ti	ppm	Titanium	0.005	10
V	ppm	Vanadium	0.5	10000
Zn	ppm	Zinc	0.50	10000

APPENDIX E (cont.)

GEOCHEMICAL DATA FOR PEAT, FEATHER MOSS, AND SEDIMENT SAMPLES

INAA Data (Feather Moss Only)

Element	Unit	Element Name	Lower Detection Limit
Ag	ppm	Silver	0.2
As	ppm	Arsenic	0.5
Au	ppb	Gold	0.1
Ba	ppm	Barium	5
Br	ppm	Bromine	1
Ca	pct	Calcium	0.2
Ce	ppm	Cerium	3
Co	ppm	Cobalt	1
Cr	ppm	Chromium	1
Cs	ppm	Cesium	0.5
Fe	pct	Iron	0.05
Hf	ppm	Hafnim	0.5
Hg	ppm	Mercury	1
K	pct	Potassium	0.05
La	ppm	Lanthium	0.1
Lu	ppm	Lutelium	0.05
Mo	ppm	Molybdenum	0.005
Na	ppm	Sodium	10
Sb	ppm	Antimony	0.1
Sc	ppm	Scandium	0.1
Sm	ppm	Samarium	0.1
Sr	ppm	Strontium	10
Zn	ppm	Zinc	50

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3500h	97KFA3613s	se	17.2	0.0	2.0	0.30	0.02	2	70	0.48	0.8	<0.5	5.5	24	0.02	1.000	0.10
97KFA3500h	97KFA3614s	se	17.2	2.0	5.0	<0.10	0.03	2	40	0.26	1.2	<0.5	6.0	29	0.03	0.280	0.06
97KFA3500h	97KFA3615s	se	17.2	5.0	8.0	0.20	0.03	10	15	0.13	2.6	<0.5	5.0	32	0.04	0.095	0.04
97KFA3500h	97KFA3616w	se	17.2	10.0	15.0	0.60	0.06	12	25	0.18	13.0	0.5	4.5	81	0.12	0.105	0.05
97KFA3500h	97KFA3617w	se	17.2	15.0	18.0	1.10	0.18	14	45	0.23	22.0	2.5	8.5	175	0.50	0.110	0.06
97KFA3500f	97KFA3618m	se	17.2	0.0	3.0	0.50	0.07	4	20	0.25	5.0	0.5	5.5	55	0.21	0.720	0.08
97KFA3500f	97KFA3619m	se	17.2	3.0	6.0	1.00	0.12	14	35	0.25	12.0	1.5	6.0	105	0.39	0.135	0.06
97KFA3500f	97KFA3620m	se	17.2	6.0	10.0	1.10	0.20	12	45	0.25	20.0	2.0	7.5	185	0.42	0.125	0.06
97KFA3500f	97KFA3621m	se	17.2	10.0	15.0	0.60	0.29	8	65	0.25	13.0	1.0	11.0	650	0.18	0.085	0.05
97KFA3500f	97KFA3622m	se	17.2	15.0	19.0	0.10	0.45	<2	60	0.23	3.6	<0.5	21.0	150	0.17	0.090	0.04
97KFA3503h	97KFA3545s	w	20.7	0.0	3.0	<0.10	0.02	<2	25	0.26	0.2	<0.5	4.0	10.5	0.02	0.570	0.07
97KFA3503h	97KFA3545w	w	20.7	0.0	3.0	<0.10	0.02	<2	30	0.27	0.2	<0.5	4.5	12.5	0.02	0.460	0.06
97KFA3503h	97KFA3546s	w	20.7	3.0	7.0	<0.10	0.02	<2	30	0.25	0.6	<0.5	4.5	15	0.02	0.510	0.07
97KFA3503h	97KFA3547s	w	20.7	7.0	10.5	0.10	0.02	2	20	0.17	0.6	<0.5	4.5	13.5	0.02	0.250	0.05
97KFA3503h	97KFA3548s	w	20.7	10.5	13.5	<0.10	0.02	<2	10	0.10	0.6	<0.5	4.5	10.5	0.02	0.200	0.05
97KFA3503h	97KFA3549s	w	20.7	13.5	17.0	0.10	0.03	<2	5	0.07	1.2	<0.5	4.5	13.5	0.03	0.185	0.04
97KFA3503h	97KFA3549w	w	20.7	13.5	17.0	<0.10	0.03	<2	5	0.06	1.0	<0.5	4.5	13.5	0.03	0.185	0.04
97KFA3503h	97KFA3550s	w	20.7	17.0	20.5	<0.10	0.03	2	5	0.15	1.8	<0.5	4.5	13	0.03	0.165	0.05
97KFA3503h	97KFA3550w	w	20.7	17.0	20.5	<0.10	0.02	<2	10	0.11	1.2	<0.5	4.5	11	0.03	0.170	0.04
97KFA3503h	97KFA3551s	w	20.7	20.5	24.5	<0.10	0.03	2	10	0.42	1.8	<0.5	4.5	13	0.05	0.120	0.09
97KFA3503h	97KFA3551w	w	20.7	20.5	24.5	0.10	0.03	2	15	0.27	3.8	<0.5	4.5	13.5	0.07	0.135	0.07
97KFA3503h	97KFA3552s	w	20.7	24.5	28.5	<0.10	0.03	2	20	0.57	3.2	0.5	4.5	12.5	0.10	0.115	0.11
97KFA3503h	97KFA3552w	w	20.7	24.5	28.5	<0.10	0.03	2	25	0.48	4.0	1.0	5.0	14	0.16	0.110	0.09
97KFA3503h	97KFA3553s	w	20.7	28.5	32.5	<0.10	0.04	6	25	0.57	3.4	0.5	4.5	15.5	0.15	0.110	0.11
97KFA3503h	97KFA3553w	w	20.7	28.5	32.5	0.20	0.04	2	25	0.51	3.4	0.5	4.5	19	0.18	0.105	0.10
97KFA3503f	97KFA3565m	w	20.7	10.0	31.0	<0.10	0.42	<2	55	1.32	2.0	1.0	9.5	46	0.42	0.040	0.13
97KFA3503f	97KFA3566m	w	20.7	31.0	60.0	<0.10	1.26	<2	70	1.24	0.6	<0.5	23.0	48	0.43	0.110	0.14
97KFA3503f	97KFA3567m	w	20.7	60.0	89.0	<0.10	1.58	<2	65	1.21	0.8	<0.5	25.0	55	0.49	0.105	0.15
97KFA3503f	97KFA3568m	w	20.7	89.0	110.0	0.10	3.10	<2	130	1.13	1.0	<0.5	53.0	110	1.12	0.230	0.29
97KFA3503f	97KFA3569m	w	20.7	110.0	135.0	<0.10	2.30	<2	115	0.87	0.6	0.5	47.0	110	0.99	0.175	0.28
97KFA3503f	97KFA3570m	w	20.7	135.0	160.0	<0.10	3.30	<2	185	0.93	0.8	2.5	70.0	165	1.86	0.340	0.59
97KFA3503f	97KFA3571m	w	20.7	160.0	175.0	0.10	1.89	<2	125	1.46	0.8	1.5	46.0	280	1.11	0.185	0.36

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3500h	97KFA3613s	se	17.2	0.0	2.0	1030	0.5	50	2.00	1480	46	2	4	<50	<0.5	47
97KFA3500h	97KFA3614s	se	17.2	2.0	5.0	450	0.5	50	4.50	590	46	2	4	<50	0.5	44
97KFA3500h	97KFA3615s	se	17.2	5.0	8.0	81	<0.5	<50	3.50	350	145	2	3	<50	0.5	45
97KFA3500h	97KFA3616w	se	17.2	10.0	15.0	56	0.5	<50	4.50	630	310	2	14	<50	2.0	125
97KFA3500h	97KFA3617w	se	17.2	15.0	18.0	77	1.5	50	9.50	950	250	2	21	50	5.0	180
97KFA3500f	97KFA3618m	se	17.2	0.0	3.0	49	0.5	300	5.00	635	80	<2	19	<50	1.5	92
97KFA3500f	97KFA3619m	se	17.2	3.0	6.0	57	1.5	50	4.50	950	180	2	22	50	3.5	110
97KFA3500f	97KFA3620m	se	17.2	6.0	10.0	68	2.0	50	7.00	1400	230	2	22	100	5.0	140
97KFA3500f	97KFA3621m	se	17.2	10.0	15.0	39	1.5	50	7.50	1050	160	2	26	200	8.0	125
97KFA3500f	97KFA3622m	se	17.2	15.0	19.0	47	1.0	100	4.00	615	44	2	25	600	11.5	62
97KFA3503h	97KFA3545s	w	20.7	0.0	3.0	720	<0.5	<50	1.00	695	10.5	<2	4.5	<50	<0.5	26
97KFA3503h	97KFA3545w	w	20.7	0.0	3.0	690	<0.5	<50	1.50	665	16	<2	5	<50	<0.5	26
97KFA3503h	97KFA3546s	w	20.7	3.0	7.0	470	<0.5	100	1.50	630	17.5	<2	6.5	<50	<0.5	31
97KFA3503h	97KFA3547s	w	20.7	7.0	10.5	270	<0.5	50	2.00	460	22	<2	6	<50	<0.5	30
97KFA3503h	97KFA3548s	w	20.7	10.5	13.5	180	<0.5	<50	2.00	395	19.5	<2	4.5	<50	<0.5	31
97KFA3503h	97KFA3549s	w	20.7	13.5	17.0	115	<0.5	<50	2.50	355	39	<2	5	<50	0.5	25
97KFA3503h	97KFA3549w	w	20.7	13.5	17.0	230	<0.5	<50	1.50	385	30	<2	5	<50	0.5	24
97KFA3503h	97KFA3550s	w	20.7	17.0	20.5	110	<0.5	<50	2.00	325	51	<2	9.5	<50	0.5	29
97KFA3503h	97KFA3550w	w	20.7	17.0	20.5	440	<0.5	<50	0.50	365	37	<2	6.5	<50	<0.5	24
97KFA3503h	97KFA3551s	w	20.7	20.5	24.5	135	0.5	<50	3.00	330	44	<2	23	<50	0.5	38
97KFA3503h	97KFA3551w	w	20.7	20.5	24.5	125	<0.5	<50	1.50	420	54	<2	15	<50	0.5	38
97KFA3503h	97KFA3552s	w	20.7	24.5	28.5	100	0.5	<50	2.50	325	39	<2	34	<50	0.5	45
97KFA3503h	97KFA3552w	w	20.7	24.5	28.5	145	0.5	<50	<0.50	355	50	<2	30	<50	0.5	43
97KFA3503h	97KFA3553s	w	20.7	28.5	32.5	88	<0.5	50	2.50	365	45	<2	34	<50	0.5	44
97KFA3503h	97KFA3553w	w	20.7	28.5	32.5	82	0.5	50	3.00	365	45	<2	32	<50	0.5	45
97KFA3503f	97KFA3565m	w	20.7	10.0	31.0	68	2.0	100	6.50	555	23	4	105	250	5.5	57
97KFA3503f	97KFA3566m	w	20.7	31.0	60.0	41	2.5	150	4.50	760	5.5	4	100	650	14.5	20
97KFA3503f	97KFA3567m	w	20.7	60.0	89.0	36	2.5	150	6.50	695	5	8	89	650	16.0	13
97KFA3503f	97KFA3568m	w	20.7	89.0	110.0	75	3.0	250	14.00	1015	12.5	8	91	1200	25.0	18.5
97KFA3503f	97KFA3569m	w	20.7	110.0	135.0	79	1.5	200	12.00	515	7.5	8	69	900	23.0	21
97KFA3503f	97KFA3570m	w	20.7	135.0	160.0	170	1.5	450	25.00	455	11	14	80	1450	37.0	54
97KFA3503f	97KFA3571m	w	20.7	160.0	175.0	125	5.5	350	17.50	465	0.5	8	97	900	39.0	24

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3510h	97KFA3725s	n	11.1	0.0	2.0	0.10	0.02	<2	35	0.31	0.6	<0.5	4.5	27	0.02	0.660	0.08
97KFA3510h	97KFA3726s	n	11.1	2.0	5.0	0.30	0.02	2	40	0.33	0.8	<0.5	5.0	44	0.03	0.690	0.08
97KFA3510h	97KFA3727s	n	11.1	5.0	8.0	0.30	0.03	4	35	0.29	1.0	<0.5	8.0	57	0.03	0.270	0.06
97KFA3510h	97KFA3728s	n	11.1	8.0	12.0	0.20	0.02	2	25	0.24	1.2	<0.5	4.5	59	0.03	0.170	0.05
97KFA3510h	97KFA3729w	n	11.1	12.0	19.0	0.30	0.03	<2	10	0.13	2.0	<0.5	5.0	73	0.05	0.100	0.04
97KFA3510h	97KFA3730w	n	11.1	19.0	26.0	0.70	0.05	10	20	0.17	7.2	0.5	5.0	110	0.08	0.095	0.05
97KFA3510h	97KFA3731w	n	11.1	26.0	32.0	0.90	0.08	24	30	0.25	18.0	1.5	5.5	190	0.17	0.115	0.06
97KFA3510f	97KFA3748m	n	11.1	0.0	5.0	1.10	0.15	12	40	0.30	11.5	1.5	7.0	360	0.34	0.090	0.06
97KFA3510f	97KFA3749m	n	11.1	5.0	13.0	0.80	0.41	20	50	0.38	15.0	2.0	11.5	440	0.44	0.070	0.07
97KFA3510f	97KFA3750m	n	11.1	13.0	19.0	0.30	0.35	10	45	0.46	8.4	1.5	7.5	165	0.20	0.060	0.06
97KFA3510f	97KFA3751m	n	11.1	20.0	35.0	1.00	0.57	<2	40	0.80	0.2	0.5	10.5	27	0.17	0.030	0.07
97KFA3510f	97KFA3752m	n	11.1	35.0	50.0	0.10	0.87	<2	50	1.14	0.2	0.5	15.0	34	0.29	0.075	0.11
97KFA3510f	97KFA3753m	n	11.1	50.0	63.0	0.50	1.38	<2	70	1.29	0.6	0.5	25.0	40	0.45	0.120	0.16
97KFA3510f	97KFA3754m	n	11.1	63.0	74.0	0.10	1.50	<2	75	1.57	0.6	1.5	25.0	44	0.57	0.130	0.20
97KFA3510f	97KFA3755m	n	11.1	74.0	86.0	0.40	1.64	<2	80	1.50	0.6	1.5	32.0	49	0.62	0.140	0.21
97KFA3510f	97KFA3756m	n	11.1	86.0	96.0	0.30	1.70	<2	80	1.98	0.6	1.5	26.0	58	0.75	0.145	0.25
97KFA3510f	97KFA3757m	n	11.1	96.0	104.0	0.30	1.86	<2	95	1.58	0.6	1.5	30.0	50	0.86	0.210	0.28
97KFA3511h	97KFA3733s	n	33.1	0.0	2.0	0.10	0.02	<2	10	0.16	<0.20	<0.5	4.5	11.5	0.02	0.490	0.05
97KFA3511h	97KFA3734s	n	33.1	2.0	4.0	0.10	0.03	<2	10	0.12	<0.20	<0.5	8.5	17	0.03	0.310	0.05
97KFA3511h	97KFA3734w	n	33.1	2.0	4.0	0.10	0.03	2	15	0.11	0.2	<0.5	5.0	18.5	0.03	0.210	0.04
97KFA3511h	97KFA3735s	n	33.1	4.0	10.0	<0.10	0.03	<2	<5	0.05	0.2	<0.5	9.0	17	0.04	0.105	0.03
97KFA3511h	97KFA3735w	n	33.1	4.0	10.0	0.10	0.04	<2	5	0.05	0.4	<0.5	5.0	21	0.04	0.100	0.03
97KFA3511h	97KFA3736s	n	33.1	10.0	16.0	0.10	0.03	<2	<5	0.04	0.8	<0.5	5.0	11	0.03	0.040	0.02
97KFA3511h	97KFA3736w	n	33.1	10.0	16.0	<0.10	0.04	2	5	0.05	0.6	<0.5	5.0	19	0.04	0.065	0.03
97KFA3511h	97KFA3737s	n	33.1	16.0	21.0	<0.10	0.03	<2	<5	0.04	1.0	<0.5	4.5	10	0.03	0.030	0.02
97KFA3511h	97KFA3737w	n	33.1	16.0	21.0	0.10	0.03	2	5	0.04	1.6	<0.5	4.5	9.5	0.03	0.035	0.02
97KFA3511h	97KFA3738s	n	33.1	21.0	28.0	0.10	0.04	4	5	0.04	3.0	<0.5	5.0	11.5	0.03	0.040	0.03
97KFA3511h	97KFA3738w	n	33.1	21.0	28.0	<0.10	0.03	2	<5	0.03	2.4	<0.5	4.5	8.5	0.03	0.025	0.02
97KFA3511h	97KFA3739w	n	33.1	28.0	36.0	0.10	0.05	6	10	0.03	4.0	<0.5	4.5	12	0.04	0.050	0.02
97KFA3511h	97KFA3740w	n	33.1	36.0	41.0	0.20	0.05	2	15	0.02	3.8	<0.5	4.5	21	0.05	0.045	0.02

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3510h	97KFA3725s	n	11.1	0.0	2.0	840	0.5	50	<0.50	900	26	<2	2.5	<50	<0.5	43
97KFA3510h	97KFA3726s	n	11.1	2.0	5.0	760	0.5	50	<0.50	580	51	<2	3	<50	0.5	53
97KFA3510h	97KFA3727s	n	11.1	5.0	8.0	460	0.5	<50	<0.50	290	83	2	2.5	<50	0.5	54
97KFA3510h	97KFA3728s	n	11.1	8.0	12.0	370	0.5	<50	0.50	275	81	2	4	<50	<0.5	47
97KFA3510h	97KFA3729w	n	11.1	12.0	19.0	120	0.5	<50	2.00	465	58	2	2	<50	0.5	53
97KFA3510h	97KFA3730w	n	11.1	19.0	26.0	86	0.5	<50	4.00	530	220	2	4.5	<50	0.5	100
97KFA3510h	97KFA3731w	n	11.1	26.0	32.0	120	1.5	<50	1.50	665	440	2	9.5	<50	2.0	170
97KFA3510f	97KFA3748m	n	11.1	0.0	5.0	120	2.0	<50	5.50	790	580	2	13.5	50	3.5	190
97KFA3510f	97KFA3749m	n	11.1	5.0	13.0	65	2.5	50	5.00	735	330	<2	24	250	8.5	170
97KFA3510f	97KFA3750m	n	11.1	13.0	19.0	54	1.5	50	5.00	665	54	2	25	150	4.5	115
97KFA3510f	97KFA3751m	n	11.1	20.0	35.0	53	1.0	50	4.50	365	<0.50	4	41	200	6.0	10.5
97KFA3510f	97KFA3752m	n	11.1	35.0	50.0	130	1.5	100	3.50	450	<0.50	2	53	300	8.5	6.5
97KFA3510f	97KFA3753m	n	11.1	50.0	63.0	190	1.5	100	6.50	465	<0.50	2	58	500	11.5	11
97KFA3510f	97KFA3754m	n	11.1	63.0	74.0	250	1.5	150	11.00	480	<0.50	4	69	550	13.0	14.5
97KFA3510f	97KFA3755m	n	11.1	74.0	86.0	300	2.0	150	7.50	495	<0.50	4	66	550	14.0	18
97KFA3510f	97KFA3756m	n	11.1	86.0	96.0	420	2.0	200	12.00	535	<0.50	2	83	550	16.5	19.5
97KFA3510f	97KFA3757m	n	11.1	96.0	104.0	360	2.0	300	13.50	515	<0.50	6	65	700	18.5	23
97KFA3511h	97KFA3733s	n	33.1	0.0	2.0	310	<0.5	50	1.50	500	12.5	<2	0.5	<50	<0.5	23
97KFA3511h	97KFA3734s	n	33.1	2.0	4.0	200	0.5	100	2.50	340	20	4	<0.50	<50	<0.5	25
97KFA3511h	97KFA3734w	n	33.1	2.0	4.0	220	<0.5	50	0.50	450	21	<2	1.5	<50	0.5	24
97KFA3511h	97KFA3735s	n	33.1	4.0	10.0	76	0.5	<50	3.00	225	18	2	<0.50	<50	0.5	19.5
97KFA3511h	97KFA3735w	n	33.1	4.0	10.0	110	0.5	50	2.00	335	19	<2	0.5	<50	0.5	25
97KFA3511h	97KFA3736s	n	33.1	10.0	16.0	55	0.5	<50	1.50	160	38	<2	0.5	<50	<0.5	16
97KFA3511h	97KFA3736w	n	33.1	10.0	16.0	93	0.5	<50	1.00	245	32	2	1	<50	0.5	24
97KFA3511h	97KFA3737s	n	33.1	16.0	21.0	40	<0.5	<50	1.50	120	44	<2	1	<50	0.5	18.5
97KFA3511h	97KFA3737w	n	33.1	16.0	21.0	76	0.5	<50	2.50	175	42	<2	0.5	<50	0.5	22
97KFA3511h	97KFA3738s	n	33.1	21.0	28.0	80	1.5	<50	1.00	195	55	<2	1.5	<50	0.5	25
97KFA3511h	97KFA3738w	n	33.1	21.0	28.0	54	1.5	<50	2.50	110	60	<2	0.5	<50	<0.5	21
97KFA3511h	97KFA3739w	n	33.1	28.0	36.0	81	0.5	<50	1.50	220	70	2	0.5	<50	0.5	28
97KFA3511h	97KFA3740w	n	33.1	36.0	41.0	59	1.0	<50	3.50	200	89	<2	1.5	<50	1.0	40

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3511f	97KFA3758m	n	33.1	0.0	9.0	0.20	0.03	<2	20	0.13	0.8	<0.5	3.5	18	0.02	0.170	0.04
97KFA3511f	97KFA3759m	n	33.1	9.0	18.0	0.20	0.07	2	15	0.06	4.4	0.5	4.0	23	0.07	0.070	0.03
97KFA3511f	97KFA3760m	n	33.1	18.0	25.0	0.40	0.27	10	35	0.13	7.6	1.0	10.0	38	0.38	0.070	0.06
97KFA3511f	97KFA3761m	n	33.1	30.0	50.0	<0.10	0.11	<2	20	0.06	0.6	<0.5	5.0	11	0.08	0.010	0.02
97KFA3511f	97KFA3762m	n	33.1	50.0	67.0	0.10	0.15	<2	15	0.05	0.2	<0.5	5.5	6.5	0.04	<0.005	0.01
97KFA3511f	97KFA3763m	n	33.1	67.0	84.0	<0.10	0.25	<2	10	0.04	<0.20	<0.5	6.5	13.5	0.04	<0.005	0.01
97KFA3511f	97KFA3764m	n	33.1	84.0	100.0	0.10	0.39	<2	10	0.05	<0.20	<0.5	8.5	21	0.05	0.005	0.01
97KFA3511f	97KFA3765m	n	33.1	100.0	120.0	<0.10	0.60	<2	10	0.05	0.2	<0.5	10.5	23	0.06	0.020	0.02
97KFA3511f	97KFA3766m	n	33.1	120.0	140.0	<0.10	0.69	<2	10	0.05	0.2	<0.5	10.5	23	0.05	0.015	0.02
97KFA3511f	97KFA3767m	n	33.1	140.0	150.0	0.20	1.42	<2	35	0.17	0.2	1.5	29.0	20	0.44	0.125	0.17
97KFA3511f	97KFA3768m	n	33.1	150.0	169.0	0.10	1.44	<2	35	0.20	0.2	1.5	27.0	14.5	0.57	0.130	0.23
97KFA3512h	97KFA3554s	w	38.4	0.0	3.0	<0.10	0.01	<2	5	0.22	<0.20	<0.5	4.5	3.5	0.01	0.710	0.11
97KFA3512h	97KFA3555s	w	38.4	3.0	7.0	<0.10	0.01	<2	10	0.26	0.2	<0.5	3.0	3.5	0.01	0.510	0.09
97KFA3512h	97KFA3556s	w	38.4	7.0	11.0	<0.10	0.01	<2	15	0.31	0.2	<0.5	3.5	5	0.01	0.390	0.08
97KFA3512h	97KFA3557s	w	38.4	11.0	17.0	<0.10	0.02	<2	20	0.20	0.2	<0.5	3.0	6	0.02	0.085	0.06
97KFA3512h	97KFA3557w	w	38.4	11.0	17.0	<0.10	0.03	<2	15	0.15	0.4	<0.5	3.0	6	0.03	0.075	0.05
97KFA3512h	97KFA3558s	w	38.4	17.0	20.0	<0.10	0.04	<2	30	0.17	1.0	0.5	3.5	8.5	0.03	0.080	0.05
97KFA3512h	97KFA3558w	w	38.4	17.0	20.0	0.10	0.06	<2	40	0.15	1.0	1.5	4.0	10.5	0.06	0.115	0.05
97KFA3514h	97KFA3559s	w	63.1	0.0	3.0	<0.10	0.01	<2	15	0.19	<0.20	<0.5	3.5	4	0.01	0.740	0.06
97KFA3514h	97KFA3560s	w	63.1	3.0	7.0	<0.10	0.01	<2	25	0.23	<0.20	<0.5	3.5	4	0.02	0.660	0.05
97KFA3514h	97KFA3561s	w	63.1	7.0	12.0	<0.10	0.02	<2	25	0.23	0.2	<0.5	3.5	4	0.02	0.380	0.04
97KFA3514h	97KFA3562s	w	63.1	12.0	19.0	<0.10	0.03	<2	30	0.28	0.2	<0.5	3.0	4	0.03	0.165	0.05
97KFA3514h	97KFA3562w	w	63.1	12.0	19.0	0.10	0.03	<2	30	0.27	0.2	<0.5	4.0	6	0.04	0.210	0.05
97KFA3514h	97KFA3563s	w	63.1	19.0	27.0	<0.10	0.03	<2	25	0.23	0.2	<0.5	4.0	4.5	0.05	0.100	0.06
97KFA3514h	97KFA3563w	w	63.1	19.0	27.0	<0.10	0.03	<2	30	0.20	0.4	<0.5	3.5	6.5	0.05	0.110	0.05
97KFA3514h	97KFA3564s	w	63.1	27.0	32.0	<0.10	0.04	<2	25	0.48	0.6	0.5	4.0	6	0.15	0.060	0.10
97KFA3514h	97KFA3564w	w	63.1	27.0	32.0	<0.10	0.04	<2	35	0.46	0.8	0.5	5.0	8	0.17	0.105	0.10
97kfa3514f	97KFA3574m	w	63.1	0.0	6.0	<0.10	0.04	<2	30	0.53	<0.20	1.0	4.0	5.5	0.34	0.220	0.10
97kfa3514f	97KFA3575m	w	63.1	6.0	13.0	<0.10	0.12	<2	55	0.67	1.0	2.5	6.0	10	1.24	0.035	0.11
97kfa3514f	97KFA3576m	w	63.1	13.0	20.0	0.30	0.23	<2	45	0.54	3.6	2.5	8.0	28	0.86	0.045	0.09
97kfa3514f	97KFA3577m	w	63.1	20.0	50.0	<0.10	0.24	<2	30	0.25	<0.20	1.0	17.5	4	0.59	0.020	0.04
97kfa3514f	97KFA3578m	w	63.1	50.0	78.0	<0.10	0.25	<2	35	0.32	<0.20	2.5	14.5	3	1.09	0.015	0.04
97kfa3514f	97KFA3579m	w	63.1	78.0	92.0	<0.10	0.58	<2	55	0.54	0.6	2.5	34.0	9.5	1.63	0.035	0.06

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3511f	97KFA3758m	n	33.1	0.0	9.0	320	<0.5	50	<0.50	510	27	<2	3.5	<50	0.5	39
97KFA3511f	97KFA3759m	n	33.1	9.0	18.0	73	1.5	<50	2.50	395	120	<2	7	<50	1.5	75
97KFA3511f	97KFA3760m	n	33.1	18.0	25.0	53	1.5	50	7.50	610	98	<2	16	200	6.0	89
97KFA3511f	97KFA3761m	n	33.1	30.0	50.0	13	<0.5	<50	0.50	475	8	<2	9.5	<50	1.5	17.5
97KFA3511f	97KFA3762m	n	33.1	50.0	67.0	4	<0.5	<50	1.00	315	1.5	<2	9.5	<50	2.0	2.5
97KFA3511f	97KFA3763m	n	33.1	67.0	84.0	2	<0.5	<50	2.00	380	0.5	<2	8	50	4.5	0.5
97KFA3511f	97KFA3764m	n	33.1	84.0	100.0	3	<0.5	<50	5.50	420	2	<2	11	50	7.0	1.5
97KFA3511f	97KFA3765m	n	33.1	100.0	120.0	6	<0.5	<50	6.00	510	<0.50	<2	9	150	12.0	2.5
97KFA3511f	97KFA3766m	n	33.1	120.0	140.0	5	0.5	<50	4.00	550	2	<2	9.5	150	11.5	2
97KFA3511f	97KFA3767m	n	33.1	140.0	150.0	69	0.5	100	9.00	210	0.5	<2	24	800	23.0	10.5
97KFA3511f	97KFA3768m	n	33.1	150.0	169.0	90	1.0	100	9.50	160	<0.50	<2	27	800	25.0	17
97KFA3512h	97KFA3554s	w	38.4	0.0	3.0	160	<0.5	50	0.50	780	2	<2	7	<50	<0.5	23
97KFA3512h	97KFA3555s	w	38.4	3.0	7.0	160	<0.5	50	0.50	505	2	<2	7	<50	<0.5	23
97KFA3512h	97KFA3556s	w	38.4	7.0	11.0	180	<0.5	50	0.50	435	3.5	<2	9.5	<50	<0.5	31
97KFA3512h	97KFA3557s	w	38.4	11.0	17.0	100	<0.5	<50	1.00	285	5.5	<2	7.5	<50	<0.5	31
97KFA3512h	97KFA3557w	w	38.4	11.0	17.0	52	<0.5	<50	2.00	335	8	<2	7	<50	0.5	29
97KFA3512h	97KFA3558s	w	38.4	17.0	20.0	39	<0.5	50	0.50	410	11	<2	10.5	<50	0.5	50
97KFA3512h	97KFA3558w	w	38.4	17.0	20.0	54	<0.5	50	3.00	555	18	<2	11.5	<50	0.5	66
97KFA3514h	97KFA3559s	w	63.1	0.0	3.0	660	<0.5	50	<0.50	875	2.5	<2	11.5	<50	<0.5	25
97KFA3514h	97KFA3560s	w	63.1	3.0	7.0	700	<0.5	50	0.50	450	5	<2	16.5	<50	<0.5	25
97KFA3514h	97KFA3561s	w	63.1	7.0	12.0	630	<0.5	50	<0.50	310	4.5	<2	14.5	<50	<0.5	22
97KFA3514h	97KFA3562s	w	63.1	12.0	19.0	740	<0.5	<50	<0.50	235	5.5	<2	18.5	<50	<0.5	27
97KFA3514h	97KFA3562w	w	63.1	12.0	19.0	730	<0.5	<50	<0.50	365	5	<2	19.5	<50	0.5	28
97KFA3514h	97KFA3563s	w	63.1	19.0	27.0	550	<0.5	<50	1.50	255	9	<2	19	<50	0.5	27
97KFA3514h	97KFA3563w	w	63.1	19.0	27.0	430	<0.5	<50	2.50	365	9	<2	18	<50	0.5	26
97KFA3514h	97KFA3564s	w	63.1	27.0	32.0	195	<0.5	<50	2.00	215	14	<2	43	<50	0.5	30
97KFA3514h	97KFA3564w	w	63.1	27.0	32.0	340	0.5	<50	6.00	410	12	<2	57	<50	1.0	41
97kfa3514f	97KFA3574m	w	63.1	0.0	6.0	250	<0.5	50	0.50	265	7	2	59	<50	1.5	31
97kfa3514f	97KFA3575m	w	63.1	6.0	13.0	140	0.5	50	5.00	595	36	<2	87	50	6.0	26
97kfa3514f	97KFA3576m	w	63.1	13.0	20.0	105	2.0	50	8.00	880	82	2	70	150	10.5	32
97kfa3514f	97KFA3577m	w	63.1	20.0	50.0	36	0.5	<50	1.50	405	<0.50	2	31	150	34.0	2
97kfa3514f	97KFA3578m	w	63.1	50.0	78.0	54	0.5	50	1.50	325	<0.50	<2	39	100	22.0	<0.50
97kfa3514f	97KFA3579m	w	63.1	78.0	92.0	84	0.5	50	7.00	405	<0.50	6	62	300	76.0	<0.50

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3519h	97KFA3830s	e	61.9	0.0	2.0	<0.10	0.01	<2	5	0.12	<0.20	<0.5	3.0	3	0.01	0.600	0.05
97KFA3519h	97KFA3831s	e	61.9	2.0	4.0	<0.10	0.02	<2	10	0.14	<0.20	<0.5	3.5	2.5	0.02	0.510	0.04
97KFA3519h	97KFA3832s	e	61.9	4.0	10.0	<0.10	0.02	<2	10	0.16	<0.20	<0.5	4.0	3.5	0.02	0.400	0.04
97KFA3519h	97KFA3833s	e	61.9	10.0	18.0	<0.10	0.02	<2	15	0.22	<0.20	<0.5	4.0	2.5	0.02	0.145	0.04
97KFA3519h	97KFA3834s	e	61.9	18.0	26.0	0.10	0.02	<2	5	0.16	<0.20	<0.5	4.0	2	0.02	0.040	0.03
97KFA3519h	97KFA3834w	e	61.9	18.0	26.0	<0.10	0.02	<2	15	0.19	<0.20	<0.5	4.0	3.5	0.02	0.045	0.04
97KFA3519h	97KFA3835w	e	61.9	26.0	33.0	<0.10	0.03	<2	15	0.19	0.2	<0.5	4.5	4.5	0.03	0.050	0.03
97KFA3519h	97KFA3836w	e	61.9	33.0	41.0	<0.10	0.03	<2	5	0.15	0.8	<0.5	4.5	5	0.03	0.035	0.04
97KFA3519h	97KFA3837w	e	61.9	41.0	50.0	<0.10	0.04	<2	15	0.18	1.4	<0.5	4.5	4.5	0.04	0.050	0.04
97KFA3519h	97KFA3838w	e	61.9	50.0	58.0	<0.10	0.06	<2	15	0.12	2.2	<0.5	4.5	4.5	0.04	0.055	0.03
97KFA3519h	97KFA3839w	e	61.9	58.0	66.0	<0.10	0.11	<2	30	0.19	2.6	1.5	4.5	6.5	0.08	0.070	0.05
97KFA3520h	97KFA3623s	se	62.6	0.0	3.0	<0.10	0.03	<2	20	0.26	<0.20	<0.5	6.0	5	0.03	0.740	0.09
97KFA3520h	97KFA3624s	se	62.6	3.0	7.0	0.10	0.05	<2	30	0.35	<0.20	<0.5	6.5	5	0.05	0.410	0.09
97KFA3520h	97KFA3625s	se	62.6	7.0	11.0	<0.10	0.05	<2	15	0.22	<0.20	<0.5	6.0	5.5	0.05	0.400	0.07
97KFA3520h	97KFA3626s	se	62.6	11.0	16.0	<0.10	0.05	<2	5	0.11	0.2	<0.5	5.5	5	0.05	0.160	0.04
97KFA3520h	97KFA3626w	se	62.6	11.0	16.0	0.10	0.06	<2	5	0.10	0.2	<0.5	6.5	6	0.06	0.100	0.04
97KFA3520h	97KFA3627s	se	62.6	16.0	23.0	0.10	0.04	<2	10	0.14	0.6	<0.5	5.5	4	0.04	0.035	0.03
97KFA3520h	97KFA3627w	se	62.6	16.0	23.0	<0.10	0.06	<2	15	0.16	1.0	<0.5	6.0	7	0.06	0.035	0.03
97KFA3520h	97KFA3628s	se	62.6	23.0	28.0	<0.10	0.03	<2	<5	0.18	2.4	<0.5	5.0	2.5	0.03	0.020	0.03
97KFA3520h	97KFA3628w	se	62.6	23.0	28.0	<0.10	0.05	<2	5	0.18	2.4	<0.5	5.5	6.5	0.05	0.035	0.03
97KFA3520h	97KFA3629s	se	62.6	28.0	33.0	<0.10	0.05	<2	<5	0.15	1.8	<0.5	6.0	7.5	0.05	0.030	0.04
97KFA3520h	97KFA3629w	se	62.6	28.0	33.0	0.20	0.06	<2	10	0.11	2.0	<0.5	5.5	13.5	0.07	0.035	0.03
97KFA3520h	97KFA3630w	se	62.6	33.0	38.0	0.20	0.09	6	30	0.05	2.2	0.5	7.0	18	0.08	0.035	0.03
97KFA3520h	97KFA3631w	se	62.6	38.0	47.0	0.10	0.22	2	60	0.07	1.2	<0.5	7.5	24	0.18	0.055	0.03
97KFA3520h	97KFA3634w	se	62.6	42.0	44.0	0.10	0.21	6	70	0.08	1.4	<0.5	8.0	22	0.16	0.060	0.04
97KFA3520h	97KFA3632w	se	62.6	47.0	57.0	<0.10	0.07	2	20	0.10	0.4	<0.5	5.0	5.5	0.04	0.025	0.04
97KFA3520h	97KFA3633w	se	62.6	57.0	63.0	0.20	0.09	2	60	0.18	<0.20	<0.5	5.5	4.5	0.04	0.030	0.05
97KFA3521h	97KFA3665s	se	78.8	0.0	3.0	<0.10	0.03	<2	25	0.16	<0.20	<0.5	5.0	3	0.04	0.420	0.06
97KFA3521h	97KFA3666s	se	78.8	3.0	6.0	<0.10	0.05	<2	25	0.16	<0.20	<0.5	5.0	3	0.06	0.310	0.06
97KFA3521h	97KFA3667s	se	78.8	6.0	11.0	<0.10	0.03	<2	20	0.15	<0.20	<0.5	6.0	4	0.04	0.105	0.05
97KFA3521h	97KFA3668s	se	78.8	11.0	18.0	<0.10	0.05	<2	15	0.14	<0.20	<0.5	6.0	3	0.05	0.050	0.04
97KFA3521h	97KFA3668w	se	78.8	11.0	18.0	0.10	0.05	<2	20	0.12	<0.20	<0.5	6.0	3.5	0.06	0.060	0.04
97KFA3521h	97KFA3669s	se	78.8	18.0	23.0	<0.10	0.08	<2	20	0.14	0.2	<0.5	8.0	3	0.09	0.060	0.04

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3519h	97KFA3830s	e	61.9	0.0	2.0	330	<0.5	50	2.00	735	3.5	<2	2	<50	<0.5	13.5
97KFA3519h	97KFA3831s	e	61.9	2.0	4.0	300	<0.5	50	2.50	385	4.5	<2	3	<50	<0.5	12
97KFA3519h	97KFA3832s	e	61.9	4.0	10.0	340	<0.5	<50	1.50	255	4	<2	3.5	<50	<0.5	12.5
97KFA3519h	97KFA3833s	e	61.9	10.0	18.0	440	<0.5	<50	1.00	220	4	<2	4.5	<50	<0.5	14.5
97KFA3519h	97KFA3834s	e	61.9	18.0	26.0	340	<0.5	<50	1.50	175	7	<2	3.5	<50	<0.5	14
97KFA3519h	97KFA3834w	e	61.9	18.0	26.0	350	<0.5	<50	3.50	215	6	<2	4.5	<50	0.5	16
97KFA3519h	97KFA3835w	e	61.9	26.0	33.0	290	<0.5	<50	3.50	300	11.5	<2	5	<50	0.5	19.5
97KFA3519h	97KFA3836w	e	61.9	33.0	41.0	185	<0.5	<50	2.50	245	23	<2	4.5	<50	0.5	29
97KFA3519h	97KFA3837w	e	61.9	41.0	50.0	210	<0.5	<50	3.50	265	29	<2	5	<50	0.5	27
97KFA3519h	97KFA3838w	e	61.9	50.0	58.0	66	<0.5	<50	0.50	260	37	<2	5	<50	0.5	22
97KFA3519h	97KFA3839w	e	61.9	58.0	66.0	55	0.5	<50	11.00	375	61	<2	19	<50	1.5	40
97KFA3520h	97KFA3623s	se	62.6	0.0	3.0	660	<0.5	100	2.00	920	5	2	3.5	<50	0.5	23
97KFA3520h	97KFA3624s	se	62.6	3.0	7.0	690	<0.5	50	4.50	515	9.5	<2	4.5	<50	1 0	28
97KFA3520h	97KFA3625s	se	62.6	7.0	11.0	300	0.5	50	2.50	470	13	<2	4	<50	1.0	30
97KFA3520h	97KFA3626s	se	62.6	11.0	16.0	75	<0.5	50	4.00	300	13	<2	3.5	<50	1.0	21
97KFA3520h	97KFA3626w	se	62.6	11.0	16.0	82	<0.5	<50	2.50	435	17.5	<2	3.5	<50	1.5	22
97KFA3520h	97KFA3627s	se	62.6	16.0	23.0	20	<0.5	<50	3.50	260	29	<2	5	<50	0.5	19.5
97KFA3520h	97KFA3627w	se	62.6	16.0	23.0	20	<0.5	<50	5.00	295	36	2	5	<50	1.5	23
97KFA3520h	97KFA3628s	se	62.6	23.0	28.0	8	<0.5	<50	2.00	145	52	<2	3.5	<50	0.5	28
97KFA3520h	97KFA3628w	se	62.6	23.0	28.0	14	0.5	<50	3.50	270	47	<2	4.5	<50	1.0	34
97KFA3520h	97KFA3629s	se	62.6	28.0	33.0	8	<0.5	<50	3.50	240	78	2	3	<50	1.5	45
97KFA3520h	97KFA3629w	se	62.6	28.0	33.0	17	0.5	<50	7.00	300	63	<2	4	<50	1.5	51
97KFA3520h	97KFA3630w	se	62.6	33.0	38.0	27	0.5	<50	7.50	305	59	<2	6.5	<50	2.0	71
97KFA3520h	97KFA3631w	se	62.6	38.0	47.0	14	0.5	<50	7.00	395	54	2	12	50	3.5	53
97KFA3520h	97KFA3634w	se	62.6	42.0	44.0	17	0.5	<50	6.00	410	54	<2	15	50	3.5	59
97KFA3520h	97KFA3632w	se	62.6	47.0	57.0	7	<0.5	<50	3.50	240	10	<2	15.5	<50	0.5	37
97KFA3520h	97KFA3633w	se	62.6	57.0	63.0	8	<0.5	<50	3.50	340	6.5	2	28	<50	0.5	40
97KFA3521h	97KFA3665s	se	78.8	0.0	3.0	590	<0.5	50	1.50	375	1.5	2	1.5	<50	0.5	14
97KFA3521h	97KFA3666s	se	78.8	3.0	6.0	560	<0.5	50	3.50	265	2.5	2	1.5	<50	1.5	12.5
97KFA3521h	97KFA3667s	se	78.8	6.0	11.0	470	<0.5	<50	2.00	230	1.5	2	1.5	<50	0.5	12
97KFA3521h	97KFA3668s	se	78.8	11.0	18.0	260	<0.5	<50	1.50	220	2	<2	1	<50	0.5	11
97KFA3521h	97KFA3668w	se	78.8	11.0	18.0	270	<0.5	<50	1.50	275	2	<2	2	<50	0.5	12
97KFA3521h	97KFA3669s	se	78.8	18.0	23.0	135	<0.5	<50	4.50	230	11	2	3.5	50	1.5	14

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3521h	97KFA3669w	se	78.8	18.0	23.0	0.10	0.08	<2	25	0.12	<0.20	<0.5	7.5	3.5	0.08	0.060	0.04
97KFA3521h	97KFA3670s	se	78.8	23.0	30.0	<0.10	0.08	<2	25	0.17	0.4	<0.5	9.0	4.5	0.08	0.075	0.05
97KFA3521h	97KFA3670w	se	78.8	23.0	30.0	0.10	0.09	<2	35	0.17	0.6	<0.5	8.5	6	0.09	0.085	0.05
97KFA3521h	97KFA3671s	se	78.8	30.0	35.0	<0.10	0.05	<2	30	0.14	0.8	<0.5	5.5	3.5	0.05	0.055	0.04
97KFA3521h	97KFA3671w	se	78.8	30.0	35.0	<0.10	0.08	<2	30	0.20	1.2	<0.5	7.5	5.5	0.09	0.085	0.05
97KFA3521h	97KFA3672w	se	78.8	35.0	40.0	0.10	0.09	<2	25	0.20	2.0	0.5	8.0	3.5	0.14	0.090	0.06
97KFA3522h	97KFA3686s	se	73.2	0.0	4.0	0.10	0.21	<2	35	0.40	<0.20	0.5	16.0	5.5	0.27	0.780	0.21
97KFA3522h	97KFA3779w	se	73.2	4.0	8.0	0.30	1.01	<2	55	0.53	4.2	5.0	42.0	23	1.26	0.330	0.46
97KFA3522h	97KFA3687s	se	73.2	8.0	13.0	0.10	0.40	<2	20	0.33	0.2	2.0	24.0	7.5	0.52	0.175	0.24
97KFA3522h	97KFA3688s	se	73.2	13.0	21.0	0.70	0.39	<2	10	0.22	0.2	2.0	26.0	6	0.49	0.130	0.21
97KFA3522h	97KFA3689s	se	73.2	21.0	32.0	0.20	0.64	<2	20	0.24	0.6	3.5	38.0	9	0.83	0.125	0.28
97KFA3522h	97KFA3690w	se	73.2	32.0	40.0	0.10	0.43	<2	10	0.26	2.4	2.5	31.0	10	0.57	0.095	0.23
97KFA3522h	97KFA3691w	se	73.2	40.0	48.0	0.30	0.52	<2	5	0.19	3.6	3.5	40.0	19	0.77	0.095	0.21
97KFA3522h	97KFA3692w	se	73.2	48.0	60.0	0.20	0.46	6	20	0.10	2.4	2.5	24.0	35	0.57	0.090	0.12
97KFA3522h	97KFA3693w	se	73.2	60.0	73.0	<0.10	0.19	8	20	0.17	2.2	1.5	8.5	19	0.19	0.050	0.09
97KFA3522f	97KFA3778m	se	73.2	0.0	4.0	0.10	0.26	<2	50	0.43	0.2	1.5	17.0	9	0.35	0.420	0.21
97KFA3522f	97KFA3780m	se	73.2	8.0	14.0	0.10	0.42	<2	35	0.21	3.8	2.0	20.0	17.5	0.50	0.090	0.11
97KFA3522f	97KFA3781m	se	73.2	14.0	20.0	0.30	0.37	<2	50	0.20	2.6	2.0	15.5	19	0.49	0.120	0.09
97KFA3522f	97KFA3782m	se	73.2	24.0	34.0	<0.10	0.18	<2	45	0.16	1.4	2.0	7.0	18.5	0.16	0.015	0.07
97KFA3522f	97KFA3783m	se	73.2	34.0	50.0	0.10	0.25	<2	35	0.08	0.2	0.5	15.5	7	0.08	0.020	0.03
97KFA3522f	97KFA3784m	se	73.2	50.0	75.0	0.10	0.41	<2	35	0.11	<0.20	1.0	64.0	11	0.09	0.020	0.02
97KFA3522f	97KFA3785m	se	73.2	75.0	100.0	<0.10	0.47	8	30	0.10	<0.20	3.0	180.0	12.5	0.08	0.020	0.02
97KFA3522f	97KFA3786m	se	73.2	100.0	106.0	0.40	1.62	<2	35	0.20	0.8	2.0	300.0	46	0.41	0.065	0.09
97KFA3523h	97KFA3850s	s	58.1	0.0	4.0	<0.10	0.02	<2	15	0.35	<0.20	<0.5	1.5	7	0.02	0.670	0.12
97KFA3523h	97KFA3851w	s	58.1	4.0	11.0	<0.10	0.03	<2	25	0.38	0.2	<0.5	2.0	10	0.04	0.200	0.10
97KFA3523h	97KFA3852w	s	58.1	11.0	17.0	<0.10	0.04	<2	15	0.25	0.4	<0.5	2.0	9.5	0.04	0.120	0.10
97KFA3523h	97KFA3853w	s	58.1	17.0	23.0	<0.10	0.05	<2	5	0.12	0.8	0.5	2.5	11.5	0.06	0.075	0.09
97KFA3523h	97KFA3854w	s	58.1	23.0	29.0	<0.10	0.07	2	5	0.09	2.4	0.5	2.5	10.5	0.10	0.065	0.09
97KFA3523h	97KFA3855w	s	58.1	29.0	34.0	<0.10	0.11	2	20	0.15	2.6	1.0	3.5	12	0.22	0.065	0.09
							0.00			0.00					0.00	0.000	0.00
97KFA3525h	97KFA3656s	se	29.5	0.0	2.0	0.10	0.02	<2	10	0.26	0.2	<0.5	5.0	8.5	0.03	0.530	0.08
97KFA3525h	97KFA3657s	se	29.5	2.0	6.0	0.10	0.03	<2	5	0.26	0.6	<0.5	5.0	8.5	0.03	0.350	0.06
97KFA3525h	97KFA3658s	se	29.5	6.0	11.0	<0.10	0.03	<2	5	0.22	0.6	<0.5	5.0	11.5	0.04	0.170	0.06

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3521h	97KFA3669w	se	78.8	18.0	23.0	175	<0.5	<50	5.00	285	11.5	2	3.5	50	2.0	14.5
97KFA3521h	97KFA3670s	se	78.8	23.0	30.0	80	<0.5	50	4.00	275	19.5	<2	4.5	50	2.0	21
97KFA3521h	97KFA3670w	se	78.8	23.0	30.0	150	<0.5	50	4.50	335	22	<2	5	50	2.0	24
97KFA3521h	97KFA3671s	se	78.8	30.0	35.0	47	<0.5	<50	1.50	195	35	<2	7.5	<50	1.0	36
97KFA3521h	97KFA3671w	se	78.8	30.0	35.0	125	<0.5	<50	3.00	345	37	2	10.5	50	2.0	48
97KFA3521h	97KFA3672w	se	78.8	35.0	40.0	94	0.5	<50	5.00	385	64	2	12.5	50	2.0	59
97KFA3522h	97KFA3686s	se	73.2	0.0	4.0	470	<0.5	150	6.00	910	<0.50	2	9.5	200	6.0	26
97KFA3522h	97KFA3779w	se	73.2	4.0	8.0	320	1.5	250	19.50	1120	53	4	48	850	30.0	110
97KFA3522h	97KFA3687s	se	73.2	8.0	13.0	220	<0.5	100	8.50	755	5	2	17	400	11.5	31
97KFA3522h	97KFA3688s	se	73.2	13.0	21.0	99	0.5	100	8.50	540	4	2	13.5	400	10.0	28
97KFA3522h	97KFA3689s	se	73.2	21.0	32.0	98	0.5	150	15.00	500	18	2	18	650	21.0	26
97KFA3522h	97KFA3690w	se	73.2	32.0	40.0	57	0.5	50	11.00	455	47	4	14	500	11.5	38
97KFA3522h	97KFA3691w	se	73.2	40.0	48.0	79	1.5	50	18.00	570	83	2	14	650	16.0	48
97KFA3522h	97KFA3692w	se	73.2	48.0	60.0	34	1.0	<50	16.00	730	79	2	10	350	11.0	69
97KFA3522h	97KFA3693w	se	73.2	60.0	73.0	13	0.5	<50	9.00	375	26	2	9.5	50	5.0	71
97KFA3522f	97KFA3778m	se	73.2	0.0	4.0	480	0.5	100	6.00	705	5	2	13	250	8.5	31
97KFA3522f	97KFA3780m	se	73.2	8.0	14.0	79	1.5	100	10.50	485	72	2	24	450	10.5	57
97KFA3522f	97KFA3781m	se	73.2	14.0	20.0	54	1.0	50	7.00	610	49	2	26	300	8.5	72
97KFA3522f	97KFA3782m	se	73.2	24.0	34.0	21	2.0	<50	2.50	380	21	<2	27	<50	3.5	33
97KFA3522f	97KFA3783m	se	73.2	34.0	50.0	10	1.5	<50	6.00	440	2	<2	15.5	100	5.5	9
97KFA3522f	97KFA3784m	se	73.2	50.0	75.0	7	1.5	<50	15.50	305	2	<2	17	150	22.0	3.5
97KFA3522f	97KFA3785m	se	73.2	75.0	100.0	9	4.5	<50	25.00	355	<0.50	2	14	200	63.0	3.5
97KFA3522f	97KFA3786m	se	73.2	100.0	106.0	39	12.5	50	25.00	535	<0.50	2	27	950	250.0	7.5
97KFA3523h	97KFA3850s	s	58.1	0.0	4.0	350	<0.5	150	2.00	930	3	<2	10.5	<50	<0.5	34
97KFA3523h	97KFA3851w	s	58.1	4.0	11.0	280	<0.5	50	1.50	530	8.5	<2	16	<50	0.5	42
97KFA3523h	97KFA3852w	s	58.1	11.0	17.0	130	<0.5	50	3.50	505	9	<2	12	<50	0.5	41
97KFA3523h	97KFA3853w	s	58.1	17.0	23.0	49	0.5	50	4.00	425	11.5	<2	8.5	<50	1.0	36
97KFA3523h	97KFA3854w	s	58.1	23.0	29.0	36	<0.5	50	5.50	400	23	<2	11.5	<50	1.5	41
97KFA3523h	97KFA3855w	s	58.1	29.0	34.0	22	<0.5	100	6.50	490	52	<2	16	50	2.5	47
97KFA3525h	97KFA3656s	se	29.5	0.0	2.0	670	<0.5	50	<0.50	860	7	2	3.5	<50	0.5	27
97KFA3525h	97KFA3657s	se	29.5	2.0	6.0	370	<0.5	50	0.50	575	10.5	2	4	<50	0.5	29
97KFA3525h	97KFA3658s	se	29.5	6.0	11.0	210	<0.5	<50	1.50	400	15	<2	3	<50	0.5	31

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3525h	97KFA3659s	se	29.5	11.0	14.0	0.10	0.04	<2	<5	0.11	0.4	<0.5	5.5	11.5	0.04	0.080	0.04
97KFA3525h	97KFA3660s	se	29.5	14.0	22.0	0.10	0.03	2	<5	0.06	1.2	<0.5	5.5	8.5	0.03	0.085	0.04
97KFA3525h	97KFA3661s	se	29.5	22.0	29.0	0.10	0.03	4	<5	0.03	1.6	<0.5	5.5	10	0.03	0.070	0.03
97KFA3525h	97KFA3661w	se	29.5	22.0	29.0	<0.10	0.03	4	<5	0.03	2.0	<0.5	5.0	12	0.04	0.070	0.04
97KFA3525h	97KFA3662s	se	29.5	29.0	37.0	0.10	0.02	6	<5	0.02	3.4	<0.5	4.5	8.5	0.03	0.055	0.02
97KFA3525h	97KFA3662w	se	29.5	29.0	37.0	<0.10	0.03	2	<5	0.03	3.0	<0.5	4.5	10	0.03	0.060	0.03
97KFA3525h	97KFA3663w	se	29.5	37.0	45.0	<0.10	0.04	2	<5	0.07	6.6	<0.5	5.5	22	0.05	0.075	0.04
97KFA3525h	97KFA3664w	se	29.5	45.0	52.0	0.40	0.09	12	10	0.17	8.4	1.0	8.0	36	0.13	0.070	0.07
97KFA3526h	97KFA3607s	se	35.4	0.0	4.0	<0.10	0.02	<2	15	0.29	0.2	<0.5	4.0	7.5	0.02	0.900	0.11
97KFA3526h	97KFA3608s	se	35.4	4.0	11.0	<0.10	0.02	<2	5	0.17	0.2	<0.5	5.0	10.5	0.03	0.640	0.07
97KFA3526h	97KFA3609s	se	35.4	11.0	16.0	0.10	0.03	<2	10	0.11	0.4	<0.5	5.0	14	0.03	0.210	0.05
97KFA3526h	97KFA3610s	se	35.4	16.0	22.0	0.10	0.03	2	<5	0.12	0.8	<0.5	5.0	14.5	0.04	0.170	0.05
97KFA3526h	97KFA3611s	se	35.4	22.0	27.0	0.10	0.03	2	5	0.14	1.2	<0.5	4.5	13.5	0.06	0.105	0.05
97KFA3526h	97KFA3611w	se	35.4	22.0	27.0	0.10	0.03	2	5	0.13	1.0	<0.5	5.5	13	0.06	0.115	0.05
97KFA3526h	97KFA3612s	se	35.4	27.0	32.0	<0.10	0.04	<2	5	0.17	2.6	0.5	4.5	14	0.09	0.070	0.05
97KFA3526h	97KFA3612w	se	35.4	27.0	32.0	<0.10	0.04	2	5	0.18	3.4	0.5	4.5	19.5	0.11	0.080	0.05
97KFA3526f	97KFA3603m	se	35.4	0.0	7.0	0.10	0.04	4	25	0.23	2.2	1.0	4.5	26	0.12	0.160	0.05
97KFA3526f	97KFA3604m	se	35.4	7.0	19.0	0.10	0.04	2	15	0.23	3.8	0.5	5.0	26	0.11	0.030	0.04
97KFA3526f	97KFA3605m	se	35.4	19.0	32.0	0.20	0.18	8	35	0.37	7.0	1.5	7.0	70	0.21	0.030	0.06
97KFA3526f	97KFA3606m	se	35.4	32.0	50.0	0.30	0.14	<2	30	0.33	1.6	1.0	6.0	38	0.14	0.010	0.05
97KFA3527h	97KFA3840s	e	15.2	0.0	7.0	0.30	0.10	<2	10	0.10	4.6	0.5	2.0	35	0.05	0.430	0.04
97KFA3527h	97KFA3841s	e	15.2	7.0	12.0	0.10	0.02	<2	15	0.22	0.6	<0.5	1.5	34	0.02	0.460	0.04
97KFA3527h	97KFA3842s	e	15.2	12.0	19.0	0.10	0.03	2	25	0.26	1.0	<0.5	2.0	44	0.04	0.240	0.04
97KFA3527h	97KFA3843s	e	15.2	19.0	25.0	0.20	0.05	<2	25	0.21	2.8	0.5	1.5	54	0.04	0.085	0.04
97KFA3527h	97KFA3844w	e	15.2	25.0	32.0	0.60	0.22	6	30	0.12	9.2	1.5	2.5	105	0.15	0.090	0.04
97KFA3527h	97KFA3845w	e	15.2	32.0	38.0	1.50	0.42	14	35	0.08	17.5	2.0	4.5	130	0.46	0.150	0.04
97KFA3527h	97KFA3846w	e	15.2	38.0	45.0	1.10	0.72	12	40	0.10	14.0	1.0	10.5	250	0.44	0.110	0.05
97KFA3527f	97KFA3847m	e	15.2	0.0	7.0	<0.10	0.02	<2	15	0.18	0.6	<0.5	1.5	18.5	0.01	0.470	0.05
97KFA3527f	97KFA3848m	e	15.2	7.0	14.0	0.30	0.42	6	20	0.06	5.8	0.5	5.0	125	0.22	0.070	0.03
97KFA3527f	97KFA3849m	e	15.2	14.0	25.0	0.50	0.92	<2	60	0.11	3.4	0.5	10.0	155	0.25	0.050	0.03

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3525h	97KFA3659s	se	29.5	11.0	14.0	39	<0.5	<50	1.50	270	10.5	<2	2.5	<50	0.5	26
97KFA3525h	97KFA3660s	se	29.5	14.0	22.0	22	<0.5	<50	0.50	310	33	2	1.5	<50	0.5	29
97KFA3525h	97KFA3661s	se	29.5	22.0	29.0	20	<0.5	<50	3.00	235	56	<2	1	<50	0.5	33
97KFA3525h	97KFA3661w	se	29.5	22.0	29.0	38	<0.5	<50	2.50	315	49	2	<0.50	<50	0.5	36
97KFA3525h	97KFA3662s	se	29.5	29.0	37.0	17	<0.5	<50	<0.50	230	77	2	0.5	<50	0.5	35
97KFA3525h	97KFA3662w	se	29.5	29.0	37.0	28	<0.5	<50	2.50	315	62	<2	1.5	<50	0.5	35
97KFA3525h	97KFA3663w	se	29.5	37.0	45.0	37	0.5	<50	2.00	335	110	<2	5	<50	1.0	63
97KFA3525h	97KFA3664w	se	29.5	45.0	52.0	56	1.5	<50	7.50	475	165	2	13.5	50	2.0	125
97KFA3526h	97KFA3607s	se	35.4	0.0	4.0	560	0.5	<50	6.50	1570	5.5	<2	3.5	<50	<0.5	35
97KFA3526h	97KFA3608s	se	35.4	4.0	11.0	220	<0.5	<50	4.50	945	15	2	3	<50	0.5	34
97KFA3526h	97KFA3609s	se	35.4	11.0	16.0	87	<0.5	<50	2.50	660	34	<2	2.5	<50	0.5	37
97KFA3526h	97KFA3610s	se	35.4	16.0	22.0	61	0.5	<50	5.00	610	28	2	3.5	<50	0.5	46
97KFA3526h	97KFA3611s	se	35.4	22.0	27.0	61	<0.5	<50	2.50	545	37	<2	5	<50	0.5	54
97KFA3526h	97KFA3611w	se	35.4	22.0	27.0	68	<0.5	<50	3.00	570	31	2	4.5	<50	0.5	52
97KFA3526h	97KFA3612s	se	35.4	27.0	32.0	44	0.5	50	2.00	475	54	<2	7	<50	0.5	62
97KFA3526h	97KFA3612w	se	35.4	27.0	32.0	48	0.5	50	2.00	510	70	2	7.5	<50	0.5	62
97KFA3526f	97KFA3603m	se	35.4	0.0	7.0	61	0.5	<50	4.50	1065	110	<2	9	<50	1.0	63
97KFA3526f	97KFA3604m	se	35.4	7.0	19.0	58	0.5	<50	2.50	420	110	<2	11	<50	1.0	52
97KFA3526f	97KFA3605m	se	35.4	19.0	32.0	52	1.0	<50	4.50	490	52	2	22	50	3.0	65
97KFA3526f	97KFA3606m	se	35.4	32.0	50.0	36	1.0	<50	5.50	520	15	2	21	<50	2.5	44
97KFA3527h	97KFA3840s	e	15.2	0.0	7.0	40	0.5	200	6.50	300	51	<2	9	<50	0.5	110
97KFA3527h	97KFA3841s	e	15.2	7.0	12.0	195	<0.5	<50	2.00	280	58	<2	3.5	<50	<0.5	47
97KFA3527h	97KFA3842s	e	15.2	12.0	19.0	210	0.5	<50	3.00	210	77	<2	4.5	<50	0.5	58
97KFA3527h	97KFA3843s	e	15.2	19.0	25.0	150	0.5	<50	5.00	295	95	<2	7	<50	0.5	84
97KFA3527h	97KFA3844w	e	15.2	25.0	32.0	68	0.5	<50	7.50	435	330	<2	11.5	<50	2.0	160
97KFA3527h	97KFA3845w	e	15.2	32.0	38.0	49	2.0	<50	11.50	760	330	<2	12	50	4.0	175
97KFA3527h	97KFA3846w	e	15.2	38.0	45.0	37	1.5	50	12.00	1410	210	<2	12.5	300	8.5	145
97KFA3527f	97KFA3847m	e	15.2	0.0	7.0	190	<0.5	<50	0.50	555	29	<2	2.5	<50	<0.5	36
97KFA3527f	97KFA3848m	e	15.2	7.0	14.0	18	1.0	<50	5.50	640	165	<2	7.5	50	4.5	91
97KFA3527f	97KFA3849m	e	15.2	14.0	25.0	20	1.0	<50	10.00	1065	100	2	13	250	8.5	84

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3528h	97KFA3716s	n	57.6	0.0	3.0	0.20	0.07	<2	10	0.21	<0.20	<0.5	6.5	9	0.09	0.510	0.08
97KFA3528h	97KFA3717s	n	57.6	3.0	7.0	0.10	0.07	<2	15	0.23	0.2	<0.5	6.5	13	0.09	0.400	0.06
97KFA3528h	97KFA3718s	n	57.6	7.0	12.0	<0.10	0.12	<2	15	0.20	0.2	<0.5	8.5	12	0.14	0.150	0.07
97KFA3528h	97KFA3719s	n	57.6	12.0	19.0	0.10	0.23	<2	10	0.20	0.2	0.5	14.5	12	0.27	0.085	0.11
97KFA3528h	97KFA3720s	n	57.6	19.0	26.0	<0.10	0.14	2	15	0.21	1.0	0.5	9.0	10.5	0.16	0.060	0.07
97KFA3528h	97KFA3721s	n	57.6	26.0	34.0	<0.10	0.12	<2	5	0.19	2.2	0.5	10.0	10	0.14	0.060	0.07
97KFA3528h	97KFA3722w	n	57.6	34.0	40.0	0.10	0.13	2	15	0.20	6.2	0.5	8.5	18.5	0.16	0.065	0.07
97KFA3528h	97KFA3723w	n	57.6	40.0	49.0	0.10	0.14	8	25	0.29	8.4	1.0	9.0	20	0.19	0.075	0.08
97KFA3528h	97KFA3724w	n	57.6	49.0	58.0	0.10	0.22	8	35	0.47	7.8	1.5	10.0	21	0.45	0.090	0.09
97KFA3528f	97KFA3809m	n	57.6	0.0	7.0	0.10	0.09	<2	10	0.17	0.2	<0.5	6.0	11	0.09	0.310	0.08
97KFA3528f	97KFA3810m	n	57.6	7.0	14.0	0.10	0.16	<2	5	0.15	0.8	0.5	8.5	11.5	0.17	0.095	0.09
97KFA3528f	97KFA3811m	n	57.6	14.0	19.0	0.20	0.16	<2	15	0.27	2.2	0.5	7.5	14	0.19	0.080	0.09
97KFA3528f	97KFA3812m	n	57.6	20.0	35.0	0.20	0.47	<2	35	0.66	0.8	0.5	9.0	8.5	0.19	0.050	0.08
97KFA3528f	97KFA3813m	n	57.6	35.0	50.0	0.10	0.61	<2	40	0.86	<0.20	<0.5	10.5	7	0.20	0.060	0.10
97KFA3528f	97KFA3814m	n	57.6	50.0	70.0	0.10	0.56	<2	40	1.07	0.2	<0.5	9.5	7.5	0.21	0.050	0.12
97KFA3528f	97KFA3815m	n	57.6	70.0	94.0	0.20	0.61	<2	45	1.89	0.2	0.5	12.0	4	0.41	0.065	0.19
97KFA3529h	97KFA3741s	n	80.8	0.0	3.0	0.10	0.06	<2	10	0.23	<0.20	<0.5	4.5	3	0.08	0.450	0.09
97KFA3529h	97KFA3742s	n	80.8	3.0	8.0	<0.10	0.12	<2	15	0.35	0.2	<0.5	6.0	3	0.16	0.330	0.12
97KFA3529h	97KFA3743s	n	80.8	8.0	12.0	0.20	0.11	<2	15	0.54	0.6	0.5	6.5	3	0.15	0.105	0.14
97KFA3529h	97KFA3744w	n	80.8	12.0	20.0	0.10	0.11	<2	15	0.56	1.0	0.5	7.0	3	0.17	0.080	0.13
97KFA3529h	97KFA3745w	n	80.8	20.0	27.0	0.10	0.12	<2	25	0.62	1.0	1.5	6.5	4.5	0.27	0.065	0.12
97KFA3529h	97KFA3746w	n	80.8	27.0	32.0	0.10	0.18	<2	30	0.67	1.0	1.5	8.0	5	0.43	0.050	0.12
97KFA3529h	97KFA3747w	n	80.8	32.0	37.0	0.10	0.19	<2	30	0.63	1.8	1.5	6.5	13.5	0.18	0.045	0.10
97KFA3529f	97KFA3802m	n	80.8	0.0	11.0	0.30	0.26	<2	30	0.57	0.8	1.5	8.5	8.5	0.39	0.240	0.16
97KFA3529f	97KFA3803m	n	80.8	9.0	34.0	0.30	0.93	<2	60	0.81	0.2	1.0	23.0	17	0.37	0.095	0.12
97KFA3529f	97KFA3804m	n	80.8	34.0	50.0	0.20	1.25	<2	60	0.90	0.4	0.5	28.0	22	0.32	0.070	0.11
97KFA3529f	97KFA3805m	n	80.8	50.0	75.0	0.10	1.11	<2	50	0.88	0.6	0.5	20.0	18.5	0.28	0.050	0.10
97KFA3529f	97KFA3806m	n	80.8	75.0	100.0	0.10	0.78	<2	40	1.29	0.2	1.0	13.0	14	0.28	0.025	0.10
97KFA3529f	97KFA3807m	n	80.8	100.0	128.0	0.10	0.44	<2	35	1.94	0.2	1.0	9.0	8	0.32	0.015	0.13
97KFA3529f	97KFA3808m	n	80.8	128.0	140.0	0.20	0.61	<2	45	2.50	0.4	1.5	14.0	11	0.58	0.070	0.23

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3528h	97KFA3716s	n	57.6	0.0	3.0	530	<0.5	150	3.50	500	6.5	<2	3.5	50	2.0	23
97KFA3528h	97KFA3717s	n	57.6	3.0	7.0	520	<0.5	150	3.00	275	14	<2	4	50	1.5	22
97KFA3528h	97KFA3718s	n	57.6	7.0	12.0	470	<0.5	50	2.50	205	14	2	4.5	50	2.5	23
97KFA3528h	97KFA3719s	n	57.6	12.0	19.0	270	<0.5	<50	4.00	215	15.5	<2	7	200	5.5	21
97KFA3528h	97KFA3720s	n	57.6	19.0	26.0	150	<0.5	<50	3.50	175	44	<2	5	50	3.0	27
97KFA3528h	97KFA3721s	n	57.6	26.0	34.0	120	1.0	<50	5.00	165	81	<2	5.5	50	2.5	32
97KFA3528h	97KFA3722w	n	57.6	34.0	40.0	120	0.5	<50	5.50	285	93	2	8	50	3.5	47
97KFA3528h	97KFA3723w	n	57.6	40.0	49.0	88	0.5	<50	3.50	310	92	<2	14.5	50	3.5	61
97KFA3528h	97KFA3724w	n	57.6	49.0	58.0	65	1.5	<50	6.00	655	57	2	28	100	4.5	61
97KFA3528f	97KFA3809m	n	57.6	0.0	7.0	185	<0.5	50	4.50	460	23	<2	6	50	2.0	24
97KFA3528f	97KFA3810m	n	57.6	7.0	14.0	51	0.5	50	4.50	270	16	<2	9	150	4.0	24
97KFA3528f	97KFA3811m	n	57.6	14.0	19.0	61	0.5	50	4.50	370	40	<2	14	100	4.0	32
97KFA3528f	97KFA3812m	n	57.6	20.0	35.0	31	2.0	50	3.00	770	3.5	<2	31	150	6.5	15
97KFA3528f	97KFA3813m	n	57.6	35.0	50.0	28	1.5	50	3.50	535	<0.50	<2	38	200	8.0	4.5
97KFA3528f	97KFA3814m	n	57.6	50.0	70.0	42	1.0	50	4.50	405	0.5	<2	48	200	8.5	5.5
97KFA3528f	97KFA3815m	n	57.6	70.0	94.0	125	1.0	50	6.00	300	<0.50	2	85	200	8.5	5.5
97KFA3529h	97KFA3741s	n	80.8	0.0	3.0	330	<0.5	50	1.50	270	0.5	2	6	50	1.5	15
97KFA3529h	97KFA3742s	n	80.8	3.0	8.0	330	0.5	150	2.50	200	5	<2	11.5	100	3.0	23
97KFA3529h	97KFA3743s	n	80.8	8.0	12.0	230	<0.5	<50	2.00	175	10	<2	20	50	2.5	38
97KFA3529h	97KFA3744w	n	80.8	12.0	20.0	190	<0.5	<50	3.00	220	18	<2	20	50	3.0	37
97KFA3529h	97KFA3745w	n	80.8	20.0	27.0	155	0.5	<50	2.50	320	47	2	25	50	2.5	29
97KFA3529h	97KFA3746w	n	80.8	27.0	32.0	105	0.5	50	6.00	500	56	2	28	50	3.5	30
97KFA3529h	97KFA3747w	n	80.8	32.0	37.0	78	1.0	<50	2.50	530	52	2	27	50	4.0	30
97KFA3529f	97KFA3802m	n	80.8	0.0	11.0	190	0.5	100	2.50	530	22	<2	25	250	7.0	35
97KFA3529f	97KFA3803m	n	80.8	9.0	34.0	63	2.0	100	4.50	1340	5	2	35	450	14.0	13.5
97KFA3529f	97KFA3804m	n	80.8	34.0	50.0	48	1.0	50	5.50	880	0.5	2	38	550	21.0	4.5
97KFA3529f	97KFA3805m	n	80.8	50.0	75.0	43	1.5	50	7.00	745	<0.50	<2	33	300	19.5	3.5
97KFA3529f	97KFA3806m	n	80.8	75.0	100.0	65	1.5	<50	6.50	580	<0.50	2	44	150	12.0	2.5
97KFA3529f	97KFA3807m	n	80.8	100.0	128.0	105	1.5	<50	5.50	345	<0.50	<2	61	50	5.0	2
97KFA3529f	97KFA3808m	n	80.8	128.0	140.0	165	2.5	50	9.50	240	<0.50	<2	82	300	17.5	22

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3530h	97KFA3821w	nw	91.7	0.0	5.0	0.10	0.03	<2	5	0.14	<0.20	<0.5	3.5	3	0.03	0.460	0.06
97KFA3530h	97KFA3822s	nw	91.7	5.0	11.0	<0.10	0.06	<2	5	0.14	0.2	<0.5	4.5	2.5	0.07	0.390	0.07
97KFA3530h	97KFA3823s	nw	91.7	11.0	17.0	<0.10	0.04	<2	<5	0.11	0.2	<0.5	4.5	3	0.05	0.115	0.07
37KFA3530h	97KFA3824s	nw	91.7	17.0	24.0	<0.10	0.04	<2	<5	0.08	0.2	<0.5	4.5	3	0.05	0.070	0.05
97KFA3530h	97KFA3824w	nw	91.7	17.0	24.0	<0.10	0.04	<2	<5	0.07	0.6	<0.5	5.0	3.5	0.05	0.080	0.05
97KFA3530h	97KFA3825w	nw	91.7	24.0	32.0	<0.10	0.06	<2	10	0.14	1.2	<0.5	4.5	3	0.06	0.075	0.05
97KFA3530h	97KFA3826w	nw	91.7	32.0	36.0	<0.10	0.11	<2	15	0.11	1.4	0.5	6.0	3.5	0.12	0.070	0.05
97KFA3530h	97KFA3827w	nw	91.7	36.0	42.0	0.10	0.18	<2	20	0.11	1.8	0.5	7.5	6.5	0.21	0.075	0.06
97KFA3530h	97KFA3828w	nw	91.7	42.0	48.0	<0.10	0.14	<2	20	0.23	2.2	0.5	6.0	7.5	0.17	0.055	0.05
97KFA3530h	97KFA3829w	nw	91.7	48.0	54.0	<0.10	0.10	2	20	0.28	1.2	0.5	4.5	4	0.13	0.035	0.05
97KFA3530f	97KFA3816m	nw	91.7	0.0	8.0	0.20	0.16	<2	25	0.17	0.4	<0.5	7.0	7.5	0.18	0.120	0.05
97KFA3530f	97KFA3817m	nw	91.7	8.0	20.0	0.10	0.22	4	45	0.50	0.6	<0.5	6.5	8	0.23	0.055	0.07
97KFA3530f	97KFA3818m	nw	91.7	24.0	30.0	0.10	0.34	<2	25	0.30	<0.20	<0.5	9.0	5.5	0.08	0.040	0.03
97KFA3530f	97KFA3819m	nw	91.7	30.0	50.0	0.10	0.51	<2	20	0.44	<0.20	<0.5	10.5	6.5	0.12	0.035	0.04
97KFA3530f	97KFA3820m	nw	91.7	50.0	54.0	<0.10	0.86	<2	35	0.47	<0.20	0.5	16.5	7.5	0.32	0.105	0.12
97KFA3533h	97KFA3694s	w	9.8	0.0	5.0	0.40	0.01	2	35	0.37	0.6	<0.5	5.0	23	0.02	0.920	0.13
97KFA3533h	97KFA3695s	w	9.8	5.0	7.5	0.40	0.02	6	25	0.30	1.0	<0.5	5.0	39	0.03	0.510	0.10
97KFA3533h	97KFA3696s	w	9.8	7.5	14.0	0.60	0.03	2	20	0.26	1.8	<0.5	5.0	34	0.03	0.180	0.08
97KFA3533h	97KFA3697s	w	9.8	14.0	17.0	<0.10	0.02	4	15	0.18	1.8	<0.5	4.0	30	0.03	0.060	0.04
97KFA3533h	97KFA3698w	w	9.8	17.0	25.0	0.40	0.04	2	30	0.25	2.0	<0.5	5.0	54	0.05	0.080	0.05
97KFA3533h	97KFA3699w	w	9.8	25.0	33.0	1.00	0.05	10	35	0.26	5.8	<0.5	5.5	78	0.06	0.105	0.05
97KFA3533h	97KFA3700w	w	9.8	33.0	40.0	0.40	0.04	16	10	0.18	8.8	<0.5	4.0	90	0.06	0.070	0.04
97KFA3533h	97KFA3701w	w	9.8	40.0	48.0	0.70	0.06	18	5	0.17	14.0	<0.5	5.5	120	0.09	0.065	0.05
97KFA3533h	97KFA3702w	w	9.8	48.0	52.0	1.10	0.06	20	15	0.30	17.0	0.5	5.5	165	0.11	0.070	0.05
97KFA3533h	97KFA3703w	w	9.8	52.0	56.0	1.20	0.11	18	15	0.55	13.0	1.5	7.0	200	0.22	0.050	0.05
97KFA3533h	97KFA3704w	w	9.8	56.0	60.0	0.30	0.13	10	15	0.72	7.8	1.0	6.5	120	0.19	0.035	0.06
97KFA3533h	97KFA3705w	w	9.8	60.0	67.0	0.20	0.12	6	20	1.07	4.6	<0.5	5.0	87	0.13	0.020	0.07
97KFA3533f	97KFA3787m	w	9.8	0.0	5.0	1.70	0.19	14	25	0.48	9.4	1.5	11.0	350	0.27	0.095	0.06
97KFA3533f	97KFA3788m	w	9.8	5.0	7.5	1.40	0.29	12	25	0.52	10.0	1.5	10.5	340	0.45	0.090	0.06
97KFA3533f	97KFA3789m	w	9.8	7.5	10.0	0.40	0.16	10	20	0.99	8.8	0.5	5.5	165	0.21	0.045	0.07
97KFA3533f	97KFA3790m	w	9.8	8.0	30.0	0.20	0.18	<2	25	1.56	2.4	<0.5	6.0	60	0.11	0.015	0.10
97KFA3533f	97KFA3791m	w	9.8	30.0	50.0	<0.10	0.20	<2	25	2.30	<0.20	<0.5	5.5	2	0.06	0.010	0.18

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3530h	97KFA3821w	nw	91.7	0.0	5.0	195	0.5	50	1.50	535	2.5	<2	1.5	<50	0.5	16.5
97KFA3530h	97KFA3822s	nw	91.7	5.0	11.0	140	<0.5	100	<0.50	270	2	<2	2.5	50	1.5	15
97KFA3530h	97KFA3823s	nw	91.7	11.0	17.0	59	<0.5	<50	1.50	190	3	<2	2.5	<50	1.0	15.5
97KFA3530h	97KFA3824s	nw	91.7	17.0	24.0	28	<0.5	<50	<0.50	145	5	<2	3	<50	0.5	15.5
97KFA3530h	97KFA3824w	nw	91.7	17.0	24.0	26	<0.5	<50	<0.50	185	4.5	<2	2.5	<50	0.5	15
97KFA3530h	97KFA3825w	nw	91.7	24.0	32.0	34	<0.5	<50	1.00	215	26	<2	5.5	<50	1.0	22
97KFA3530h	97KFA3826w	nw	91.7	32.0	36.0	61	<0.5	<50	2.00	270	47	<2	7	50	2.0	24
97KFA3530h	97KFA3827w	nw	91.7	36.0	42.0	27	<0.5	<50	2.00	420	66	<2	10	150	3.5	33
97KFA3530h	97KFA3828w	nw	91.7	42.0	48.0	17	<0.5	<50	5.50	380	66	<2	13.5	50	2.5	46
97KFA3530h	97KFA3829w	nw	91.7	48.0	54.0	10	<0.5	<50	<0.50	330	38	<2	13.5	<50	1.5	38
97KFA3530f	97KFA3816m	nw	91.7	0.0	8.0	46	0.5	50	5.00	560	35	<2	6	100	3.5	22
97KFA3530f	97KFA3817m	nw	91.7	8.0	20.0	22	1.0	50	5.00	740	44	<2	21	50	3.5	35
97KFA3530f	97KFA3818m	nw	91.7	24.0	30.0	9	0.5	<50	2.50	305	2.5	<2	11.5	150	4.5	6
97KFA3530f	97KFA3819m	nw	91.7	30.0	50.0	12	0.5	<50	4.50	320	1	<2	13.5	200	9.0	1.5
97KFA3530f	97KFA3820m	nw	91.7	50.0	54.0	34	0.5	50	7.00	295	<0.50	<2	16	350	16.0	5.5
97KFA3533h	97KFA3694s	w	9.8	0.0	5.0	1090	<0.5	50	7.50	1365	33	<2	5.5	<50	<0.5	39
97KFA3533h	97KFA3695s	w	9.8	5.0	7.5	760	<0.5	50	3.00	585	62	<2	4	<50	0.5	38
97KFA3533h	97KFA3696s	w	9.8	7.5	14.0	410	<0.5	<50	3.00	435	46	2	4.5	<50	0.5	38
97KFA3533h	97KFA3697s	w	9.8	14.0	17.0	150	<0.5	<50	1.50	330	34	<2	3	<50	0.5	29
97KFA3533h	97KFA3698w	w	9.8	17.0	25.0	190	0.5	<50	3.50	615	94	<2	4.5	<50	0.5	41
97KFA3533h	97KFA3699w	w	9.8	25.0	33.0	185	0.5	<50	4.50	705	260	2	5.5	<50	1.5	66
97KFA3533h	97KFA3700w	w	9.8	33.0	40.0	100	1.0	<50	0.50	455	270	2	4	<50	1.5	73
97KFA3533h	97KFA3701w	w	9.8	40.0	48.0	69	1.5	<50	5.00	500	320	2	4.5	<50	2.0	93
97KFA3533h	97KFA3702w	w	9.8	48.0	52.0	46	1.0	<50	3.00	580	330	<2	8.5	<50	2.0	115
97KFA3533h	97KFA3703w	w	9.8	52.0	56.0	43	2.5	<50	5.50	600	200	2	16.5	50	3.0	130
97KFA3533h	97KFA3704w	w	9.8	56.0	60.0	29	2.0	<50	3.00	540	37	2	22	50	2.5	85
97KFA3533h	97KFA3705w	w	9.8	60.0	67.0	7	2.0	<50	5.50	440	12.5	2	37	<50	1.5	77
97KFA3533f	97KFA3787m	w	9.8	0.0	5.0	46	2.5	50	9.50	825	440	<2	15.5	100	5.5	185
97KFA3533f	97KFA3788m	w	9.8	5.0	7.5	39	2.5	50	7.50	810	190	<2	18	150	6.5	170
97KFA3533f	97KFA3789m	w	9.8	7.5	10.0	26	2.5	<50	0.50	630	95	<2	30	50	3.0	145
97KFA3533f	97KFA3790m	w	9.8	8.0	30.0	11	1.5	<50	1.50	420	18.5	<2	51	50	2.5	67
97KFA3533f	97KFA3791m	w	9.8	30.0	50.0	10	1.5	<50	0.50	190	<0.50	2	78	50	2.5	2.5

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3533f	97KFA3792m	w	9.8	50.0	75.0	0.20	0.18	<2	25	2.60	0.2	<0.5	6.5	4	0.06	0.010	0.20
97KFA3533f	97KFA3793m	w	9.8	75.0	100.0	0.20	0.18	<2	30	3.10	0.2	<0.5	6.5	3.5	0.08	0.015	0.23
97KFA3533f	97KFA3794m	w	9.8	100.0	111.0	<0.10	0.17	<2	25	2.80	0.2	<0.5	5.5	2.5	0.10	0.015	0.20
97KFA3533f	97KFA3795m	w	9.8	111.0	115.0	0.10	0.12	<2	20	2.20	0.2	<0.5	5.5	2.5	0.09	0.005	0.16
97KFA3533f	97KFA3796m	w	9.8	115.0	127.0	0.40	0.48	<2	50	3.60	<0.20	1.0	11.0	5	0.30	0.050	0.25
97KFA3533f	97KFA3797m	w	9.8	127.0	152.0	0.30	1.38	<2	80	2.40	0.2	2.0	32.0	15	0.77	0.185	0.40
97KFA3533f	97KFA3798m	w	9.8	152.0	177.0	0.40	1.43	<2	85	2.10	0.4	2.0	35.0	23	0.81	0.220	0.43
97KFA3533f	97KFA3799m	w	9.8	177.0	202.0	0.50	1.02	<2	65	2.80	0.4	3.0	23.0	23	0.78	0.160	0.40
97KFA3533f	97KFA3800m	w	9.8	202.0	227.0	0.10	0.39	<2	35	2.40	<0.20	1.5	11.0	13	0.39	0.055	0.26
97KFA3533f	97KFA3801m	w	9.8	227.0	238.0	0.40	1.25	<2	75	2.30	0.6	4.5	28.0	32	1.10	0.230	0.53
97KFA3534h	97KFA3706s	w	8.6	0.0	3.0	0.30	0.02	<2	30	0.26	0.6	<0.5	3.5	29	0.02	0.550	0.06
97KFA3534h	97KFA3707s	w	8.6	3.0	5.0	0.30	0.03	4	35	0.27	1.0	<0.5	4.5	55	0.04	0.450	0.06
97KFA3534h	97KFA3708s	w	8.6	5.0	9.0	0.10	0.04	4	25	0.25	1.2	<0.5	4.0	52	0.05	0.270	0.05
97KFA3534h	97KFA3709w	w	8.6	9.0	13.0	0.60	0.06	4	25	0.22	2.6	<0.5	5.0	58	0.07	0.110	0.05
97KFA3534h	97KFA3710w	w	8.6	13.0	19.0	0.90	0.10	12	40	0.18	7.8	0.5	6.5	92	0.13	0.090	0.04
97KFA3534h	97KFA3711w	w	8.6	19.0	27.0	1.20	0.20	22	45	0.20	15.5	0.5	9.0	270	0.27	0.070	0.04
97KFA3534h	97KFA3712w	w	8.6	27.0	33.0	0.70	0.39	18	20	0.20	12.5	1.0	13.5	270	0.54	0.075	0.07
97KFA3534h	97KFA3713w	w	8.6	33.0	40.0	0.70	0.41	16	20	0.16	10.5	1.0	12.5	400	0.55	0.060	0.06
97KFA3534h	97KFA3714w	w	8.6	40.0	46.0	0.40	0.29	10	30	0.16	7.0	1.5	7.5	450	0.47	0.050	0.05
97KFA3534h	97KFA3715w	w	8.6	46.0	51.0	0.10	0.19	10	30	0.18	5.4	1.0	6.0	140	0.15	0.050	0.04
97KFA3534f	97KFA3769m	w	8.6	0.0	15.0	0.90	0.22	14	15	0.15	8.0	0.5	8.5	160	0.22	0.080	0.06
97KFA3534f	97KFA3770m	w	8.6	20.0	35.0	0.10	0.10	<2	25	0.16	<0.20	<0.5	4.5	5.5	0.03	0.005	0.03
97KFA3534f	97KFA3771m	w	8.6	35.0	50.0	0.10	0.19	<2	35	0.27	<0.20	<0.5	5.5	3.5	0.05	0.005	0.03
97KFA3534f	97KFA3772m	w	8.6	50.0	75.0	0.10	0.35	<2	35	0.26	0.2	<0.5	8.0	18	0.05	0.015	0.03
97KFA3534f	97KFA3773m	w	8.6	75.0	100.0	0.30	0.30	<2	25	0.29	<0.20	0.5	8.0	23	0.05	0.005	0.03
97KFA3534f	97KFA3774m	w	8.6	100.0	130.0	0.10	0.47	<2	30	0.45	0.2	1.0	12.5	18	0.15	0.035	0.07
97KFA3534f	97KFA3775m	w	8.6	130.0	150.0	0.40	2.00	<2	115	0.65	0.6	5.5	40.0	24	1.11	0.290	0.46
97KFA3534f	97KFA3776m	w	8.6	150.0	166.0	0.30	2.40	<2	150	0.65	0.8	7.5	40.0	24	1.51	0.400	0.61
97KFA3534f	97KFA3777m	w	8.6	166.0	198.0	0.50	2.80	<2	180	0.74	0.8	10.5	57.0	24	2.20	0.550	0.91
97KFA3536Ah	97KFA3680s	nw	7.1	0.0	4.0	0.30	0.04	<2	15	0.20	3.8	1.5	4.0	32	0.02	0.570	0.07
97KFA3536Ah	97KFA3681s	nw	7.1	4.0	8.0	0.40	0.19	2	25	0.21	9.6	2.5	5.0	95	0.06	0.730	0.07
97KFA3536Ah	97KFA3682s	nw	7.1	8.0	18.0	0.30	0.40	2	40	0.33	15.5	4.5	5.0	140	0.10	0.260	0.06
97KFA3536Ah	97KFA3683s	nw	7.1	18.0	23.0	0.20	0.55	<2	30	0.25	14.0	4.5	10.5	145	0.13	0.040	0.05

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3533f	97KFA3792m	w	9.8	50.0	75.0	11	3.0	<50	<0.50	280	0.5	<2	80	50	2.0	5
97KFA3533f	97KFA3793m	w	9.8	75.0	100.0	17	4.5	<50	1.50	375	<0.50	2	97	50	2.0	2.5
97KFA3533f	97KFA3794m	w	9.8	100.0	111.0	18	5.0	<50	1.00	250	<0.50	<2	90	50	2.5	2
97KFA3533f	97KFA3795m	w	9.8	111.0	115.0	15	5.5	<50	<0.50	170	2	<2	66	<50	2.0	2
97KFA3533f	97KFA3796m	w	9.8	115.0	127.0	37	9.0	50	3.00	340	<0.50	2	115	150	6.5	13.5
97KFA3533f	97KFA3797m	w	9.8	127.0	152.0	85	6.0	150	10.50	425	<0.50	4	83	500	17.5	38
97KFA3533f	97KFA3798m	w	9.8	152.0	177.0	105	4.0	250	9.50	430	<0.50	6	80	550	22.0	41
97KFA3533f	97KFA3799m	w	9.8	177.0	202.0	110	5.5	250	9.00	480	<0.50	4	110	450	25.0	22
97KFA3533f	97KFA3800m	w	9.8	202.0	227.0	81	9.5	150	7.00	400	<0.50	<2	98	200	22.0	14
97KFA3533f	97KFA3801m	w	9.8	227.0	238.0	180	6.0	300	13.50	525	<0.50	6	105	600	40.0	36
97KFA3534h	97KFA3706s	w	8.6	0.0	3.0	590	<0.5	50	<0.50	515	44	<2	1.5	<50	<0.5	29
97KFA3534h	97KFA3707s	w	8.6	3.0	5.0	530	0.5	50	3.50	305	93	2	1.5	<50	0.5	41
97KFA3534h	97KFA3708s	w	8.6	5.0	9.0	490	<0.5	50	1.50	290	63	2	1.5	<50	0.5	39
97KFA3534h	97KFA3709w	w	8.6	9.0	13.0	360	<0.5	<50	4.00	390	110	<2	3	<50	1.5	46
97KFA3534h	97KFA3710w	w	8.6	13.0	19.0	185	1.5	<50	2.00	415	340	<2	3	50	2.5	73
97KFA3534h	97KFA3711w	w	8.6	19.0	27.0	120	2.5	50	6.50	410	540	<2	6	150	5.5	155
97KFA3534h	97KFA3712w	w	8.6	27.0	33.0	100	1.0	50	5.00	435	240	2	10.5	350	11.0	115
97KFA3534h	97KFA3713w	w	8.6	33.0	40.0	75	1.0	50	6.50	465	165	2	9.5	300	9.0	140
97KFA3534h	97KFA3714w	w	8.6	40.0	46.0	67	0.5	50	5.50	435	125	2	12	100	5.5	155
97KFA3534h	97KFA3715w	w	8.6	46.0	51.0	9	0.5	<50	4.50	610	26	<2	14	50	2.5	115
97KFA3534f	97KFA3769m	w	8.6	0.0	15.0	40	0.5	100	5.50	380	310	<2	8.5	150	5.0	155
97KFA3534f	97KFA3770m	w	8.6	20.0	35.0	12	<0.5	<50	0.50	275	2	<2	8	50	1.5	9
97KFA3534f	97KFA3771m	w	8.6	35.0	50.0	15	0.5	<50	0.50	260	2	2	11.5	50	1.5	2.5
97KFA3534f	97KFA3772m	w	8.6	50.0	75.0	15	1.0	<50	2.50	420	2.5	<2	11	50	6.5	4
97KFA3534f	97KFA3773m	w	8.6	75.0	100.0	17	1.5	<50	5.50	340	0.5	<2	9.5	50	8.5	3
97KFA3534f	97KFA3774m	w	8.6	100.0	130.0	43	1.5	<50	9.00	345	<0.50	2	13.5	150	11.5	6
97KFA3534f	97KFA3775m	w	8.6	130.0	150.0	160	2.0	150	23.00	445	<0.50	8	29	750	30.0	44
97KFA3534f	97KFA3776m	w	8.6	150.0	166.0	210	2.5	250	26.00	425	<0.50	8	30	900	39.0	61
97KFA3534f	97KFA3777m	w	8.6	166.0	198.0	310	3.0	400	26.00	405	<0.50	8	35	1200	50.0	76
97KFA3536Ah	97KFA3680s	nw	7.1	0.0	4.0	96	0.5	50	<0.50	370	38	2	8	<50	<0.5	97
97KFA3536Ah	97KFA3681s	nw	7.1	4.0	8.0	84	0.5	50	4.00	275	130	2	8.5	<50	0.5	175
97KFA3536Ah	97KFA3682s	nw	7.1	8.0	18.0	97	0.5	<50	6.50	270	240	2	16.5	<50	0.5	300
97KFA3536Ah	97KFA3683s	nw	7.1	18.0	23.0	67	1.0	<50	5.50	315	270	2	12	<50	0.5	240

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3536A	97KFA3684w	nw	7.1	23.0	28.0	0.80	0.74	10	30	0.14	10.0	5.0	9.0	185	0.77	0.110	0.07
97KFA3536A	97KFA3685w	nw	7.1	33.0	43.0	0.90	2.70	<2	85	0.34	7.6	6.5	32.0	320	1.56	0.200	0.36
97KFA3536h	97KFA3673s	nw	7.1	0.0	6.0	0.20	0.04	<2	20	0.19	5.8	2.0	4.5	38	0.02	0.450	0.06
97KFA3536h	97KFA3674s	nw	7.1	6.0	12.0	0.70	0.18	<2	40	0.32	16.0	3.0	9.0	125	0.05	0.860	0.09
97KFA3536h	97KFA3675s	nw	7.1	12.0	18.0	0.60	0.26	<2	55	0.44	18.0	5.0	5.0	145	0.07	0.440	0.09
97KFA3536h	97KFA3676s	nw	7.1	18.0	27.0	0.40	0.47	2	50	0.33	14.5	5.0	5.5	160	0.12	0.380	0.07
97KFA3536h	97KFA3677s	nw	7.1	27.0	33.0	0.50	0.64	<2	25	0.19	10.5	4.5	5.5	155	0.42	0.075	0.04
97KFA3536h	97KFA3677w	nw	7.1	27.0	33.0	0.60	0.62	10	30	0.17	8.4	5.0	5.5	180	0.67	0.090	0.04
97KFA3536h	97KFA3678w	nw	7.1	33.0	41.0	0.90	0.76	48	40	0.19	9.8	11.0	7.5	240	1.94	0.115	0.09
97KFA3536h	97KFA3679w	nw	7.1	41.0	49.0	1.00	1.14	26	45	0.25	13.0	6.0	13.5	460	1.13	0.050	0.12
97KFA3537h	97KFA3580s	se	11.9	0.0	4.0	0.20	0.01	<2	15	0.18	0.8	<0.5	4.5	51	0.02	0.450	0.07
97KFA3537h	97KFA3581s	se	11.9	4.0	11.0	0.20	0.02	4	25	0.27	2.2	<0.5	4.5	76	0.04	0.430	0.11
97KFA3537h	97KFA3582s	se	11.9	11.0	14.0	0.30	0.03	2	25	0.33	4.0	0.5	10.0	92	0.06	0.320	0.11
97KFA3537h	97KFA3583w	se	11.9	14.0	20.0	0.70	0.12	8	35	0.43	15.0	2.0	6.5	300	0.27	0.080	0.09
97KFA3537h	97KFA3584w	se	11.9	20.0	29.0	1.80	0.29	20	50	0.56	20.0	3.0	10.5	570	1.02	0.095	0.09
97KFA3537h	97KFA3585w	se	11.9	29.0	32.0	1.00	0.24	18	55	0.61	16.0	2.5	8.5	490	0.87	0.055	0.08
97KFA3537f	97KFA3586m	se	11.9	0.0	6.0	0.60	0.08	12	20	0.39	16.0	1.5	6.0	230	0.20	0.190	0.08
97KFA3537f	97KFA3587m	se	11.9	6.0	19.0	0.60	0.22	6	45	0.49	11.5	1.5	6.0	370	0.23	0.020	0.06
97KFA3537f	97KFA3588m	se	11.9	25.0	50.0	<0.10	0.58	<2	65	0.82	0.8	0.5	11.5	37	0.22	0.040	0.09
97KFA3537f	97KFA3589m	se	11.9	50.0	75.0	0.10	1.22	<2	70	0.92	0.6	0.5	24.0	46	0.43	0.095	0.13
97KFA3537f	97KFA3590m	se	11.9	75.0	100.0	0.10	1.13	<2	95	2.10	0.4	2.5	25.0	72	0.68	0.090	0.23
97KFA3537f	97KFA3591m	se	11.9	100.0	120.0	0.10	0.62	<2	75	2.50	0.2	2.5	14.5	57	0.62	0.050	0.21
97KFA3537f	97KFA3592m	se	11.9	120.0	131.0	<0.10	0.18	8	30	1.58	<0.20	2.0	7.5	17	0.40	0.015	0.15
97KFA3538h	97KFA3593s	s	9.6	0.0	6.0	0.10	0.01	2	5	0.13	1.8	<0.5	3.5	33	0.02	0.600	0.06
97KFA3538h	97KFA3594s	s	9.6	6.0	10.0	0.40	0.06	6	15	0.28	6.4	0.5	4.5	135	0.08	0.580	0.08
97KFA3538h	97KFA3595s	s	9.6	10.0	13.0	0.30	0.11	10	15	0.40	9.2	1.5	5.0	150	0.16	0.230	0.12
97KFA3538h	97KFA3596s	s	9.6	13.0	16.0	0.40	0.17	8	10	0.26	7.4	1.5	9.0	170	0.35	0.085	0.12
97KFA3538h	97KFA3597s	s	9.6	16.0	23.0	1.10	0.37	12	5	0.24	4.8	3.0	19.0	130	1.15	0.070	0.21
97KFA3539h	97KFA3598s	s	10.4	0.0	4.0	0.40	0.02	2	25	0.32	1.4	<0.5	9.5	60	0.03	0.610	0.08
97KFA3539h	97KFA3599s	s	10.4	4.0	11.0	0.40	0.03	4	25	0.34	2.4	<0.5	5.0	110	0.07	0.130	0.07
97KFA3539h	97KFA3600s	s	10.4	11.0	19.0	0.40	0.04	4	20	0.33	4.2	0.5	5.5	105	0.13	0.080	0.08
97KFA3539h	97KFA3601s	s	10.4	19.0	28.0	0.60	0.06	8	15	0.33	5.2	0.5	9.0	72	0.32	0.090	0.07

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3536Ah	97KFA3684w	nw	7.1	23.0	28.0	58	1.5	50	4.00	660	280	2	7.5	150	6.0	175
97KFA3536Ah	97KFA3685w	nw	7.1	33.0	43.0	135	3.0	150	21.00	1465	260	8	28	1100	29.0	165
97KFA3536h	97KFA3673s	nw	7.1	0.0	6.0	63	0.5	50	2.50	380	37	2	8.5	<50	<0.5	140
97KFA3536h	97KFA3674s	nw	7.1	6.0	12.0	93	0.5	50	4.00	300	135	4	14.5	<50	<0.5	290
97KFA3536h	97KFA3675s	nw	7.1	12.0	18.0	130	0.5	50	4.00	280	200	2	23	<50	0.5	360
97KFA3536h	97KFA3676s	nw	7.1	18.0	27.0	96	<0.5	<50	7.00	280	250	2	16.5	<50	0.5	290
97KFA3536h	97KFA3677s	nw	7.1	27.0	33.0	48	0.5	<50	5.00	350	410	4	9.5	<50	2.5	190
97KFA3536h	97KFA3677w	nw	7.1	27.0	33.0	49	0.5	<50	6.50	470	330	2	9	<50	3.5	175
97KFA3536h	97KFA3678w	nw	7.1	33.0	41.0	48	1.5	50	6.00	735	400	6	11	50	11.5	240
97KFA3536h	97KFA3679w	nw	7.1	41.0	49.0	71	2.5	50	9.00	970	520	6	14.5	250	13.0	210
97KFA3537h	97KFA3580s	se	11.9	0.0	4.0	330	<0.5	50	1.50	640	50	2	4.5	<50	<0.5	52
97KFA3537h	97KFA3581s	se	11.9	4.0	11.0	320	<0.5	150	1.50	455	115	<2	8.5	<50	0.5	80
97KFA3537h	97KFA3582s	se	11.9	11.0	14.0	300	0.5	50	<0.50	530	140	2	14	<50	0.5	125
97KFA3537h	97KFA3583w	se	11.9	14.0	20.0	79	1.5	50	5.00	975	460	<2	33	100	4.0	220
97KFA3537h	97KFA3584w	se	11.9	20.0	29.0	63	3.0	100	8.50	1035	660	6	49	200	6.5	250
97KFA3537h	97KFA3585w	se	11.9	29.0	32.0	69	2.0	50	7.00	835	550	4	52	150	4.5	210
97KFA3537f	97KFA3586m	se	11.9	0.0	6.0	61	0.5	100	4.50	800	370	<2	28	<50	1.5	165
97KFA3537f	97KFA3587m	se	11.9	6.0	19.0	41	1.0	<50	6.00	440	175	2	42	100	3.0	155
97KFA3537f	97KFA3588m	se	11.9	25.0	50.0	69	1.5	50	4.50	455	3.5	2	67	300	5.5	39
97KFA3537f	97KFA3589m	se	11.9	50.0	75.0	68	2.0	100	12.50	505	1.5	6	71	500	11.0	28
97KFA3537f	97KFA3590m	se	11.9	75.0	100.0	155	2.5	150	21.00	565	<0.50	4	155	500	16.5	69
97KFA3537f	97KFA3591m	se	11.9	100.0	120.0	180	8.5	150	19.00	435	<0.50	4	165	250	14.5	25
97KFA3537f	97KFA3592m	se	11.9	120.0	131.0	135	11.5	100	17.50	275	<0.50	<2	93	50	4.5	12
97KFA3538h	97KFA3593s	s	9.6	0.0	6.0	100	<0.5	100	<0.50	740	33	2	6.5	<50	<0.5	59
97KFA3538h	97KFA3594s	s	9.6	6.0	10.0	110	<0.5	100	2.50	560	310	<2	13.5	<50	0.5	145
97KFA3538h	97KFA3595s	s	9.6	10.0	13.0	165	0.5	50	2.50	590	480	2	22	<50	0.5	200
97KFA3538h	97KFA3596s	s	9.6	13.0	16.0	99	0.5	50	3.50	670	390	<2	15	100	4.0	150
97KFA3538h	97KFA3597s	s	9.6	16.0	23.0	88	0.5	50	7.50	660	360	4	15.5	350	11.0	110
97KFA3539h	97KFA3598s	s	10.4	0.0	4.0	220	0.5	<50	6.00	640	83	2	5	<50	<0.5	59
97KFA3539h	97KFA3599s	s	10.4	4.0	11.0	105	<0.5	<50	1.00	380	230	2	8.5	<50	0.5	99
97KFA3539h	97KFA3600s	s	10.4	11.0	19.0	55	0.5	<50	4.00	365	330	2	10.5	<50	0.5	125
97KFA3539h	97KFA3601s	s	10.4	19.0	28.0	39	0.5	<50	3.50	520	560	2	10.5	<50	0.5	155

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Ag ppm	Al pct	As ppm	Ba ppm	Ca pct	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe pct	K pct	Mg pct
97KFA3540h	97KFA3635s	sw	11.6	0.0	4.0	0.10	0.02	<2	20	0.23	0.6	<0.5	4.5	16	0.02	0.770	0.11
97KFA3540h	97KFA3636s	sw	11.6	4.0	12.0	0.40	0.03	<2	25	0.26	0.6	<0.5	5.0	27	0.03	0.460	0.08
97KFA3540h	97KFA3637w	sw	11.6	12.0	17.0	0.40	0.06	2	25	0.20	1.0	<0.5	6.0	36	0.07	0.095	0.07
97KFA3540h	97KFA3638w	sw	11.6	17.0	24.0	0.60	0.09	2	30	0.17	1.6	<0.5	7.0	52	0.11	0.080	0.07
97KFA3540h	97KFA3639w	sw	11.6	24.0	29.0	0.70	0.24	24	40	0.25	9.8	0.5	10.0	105	0.29	0.065	0.08
97KFA3540h	97KFA3640w	sw	11.6	34.0	40.0	1.00	0.18	16	30	0.26	12.0	0.5	9.0	97	0.21	0.080	0.07
97KFA3540h	97KFA3641w	sw	11.6	40.0	44.0	0.80	0.17	22	25	0.27	17.0	1.5	8.0	160	0.23	0.060	0.05
97KFA3540h	97KFA3642w	sw	11.6	44.0	50.0	0.10	0.06	10	15	0.31	3.8	0.5	4.5	84	0.08	0.015	0.04
97KFA3540h	97KFA3643w	sw	11.6	50.0	60.0	0.10	0.38	<2	70	0.98	2.8	2.0	8.0	85	0.40	0.030	0.08
97KFA3540f	97KFA3644m	sw	11.6	0.0	4.0	0.60	0.29	14	35	0.32	4.0	1.0	8.5	170	0.36	0.100	0.11
97KFA3540f	97KFA3645m	sw	11.6	4.0	10.0	0.50	0.37	20	40	0.48	7.8	2.0	10.5	460	0.59	0.065	0.07
97KFA3540f	97KFA3646m	sw	11.6	10.0	15.0	0.10	0.34	<2	65	0.98	4.0	1.5	6.5	120	0.37	0.025	0.07
97KFA3540f	97KFA3647m	sw	11.6	15.0	23.0	0.10	0.48	<2	70	0.88	0.8	0.5	10.5	34	0.25	0.030	0.07
97KFA3540f	97KFA3648m	sw	11.6	32.0	50.0	0.30	1.17	<2	85	1.07	0.8	0.5	29.0	69	0.30	0.085	0.12
97KFA3540f	97KFA3649m	sw	11.6	108.0	118.0	0.50	3.00	<2	175	1.11	0.6	5.5	72.0	48	1.52	0.380	0.64
97KFA3540f	97KFA3650m	sw	11.6	118.0	150.0	0.30	2.10	<2	135	1.48	0.8	4.0	39.0	63	1.05	0.250	0.44
97KFA3540f	97KFA3651m	sw	11.6	150.0	166.0	0.10	1.59	<2	105	1.48	0.6	3.0	32.0	70	0.84	0.190	0.36
97KFA3540f	97KFA3652m	sw	11.6	166.0	200.0	0.20	1.01	<2	70	1.43	0.2	1.5	25.0	64	0.46	0.090	0.20
97KFA3540f	97KFA3653m	sw	11.6	200.0	220.0	0.10	0.89	<2	70	1.71	0.2	2.0	26.0	87	0.51	0.070	0.22
97KFA3540f	97KFA3654m	sw	11.6	220.0	240.0	0.30	0.56	<2	65	2.30	0.8	3.0	19.5	120	0.63	0.035	0.25
97KFA3540f	97KFA3655m	sw	11.6	240.0	247.0	0.10	0.87	<2	65	1.87	0.6	7.5	33.0	125	0.89	0.085	0.36

Geochemical Data (ICP-AES) for Peat Samples

Site Number/ Sample Type	Laboratory Number	Sector	Dist. km	From cm	To cm	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm	Sr ppm	Ti ppm	V ppm	Zn ppm
97KFA3540h	97KFA3635s	sw	11.6	0.0	4.0	330	<0.5	50	0.50	650	27	2	3	<50	<0.5	31
97KFA3540h	97KFA3636s	sw	11.6	4.0	12.0	260	<0.5	<50	3.00	415	62	<2	5.5	<50	<0.5	37
97KFA3540h	97KFA3637w	sw	11.6	12.0	17.0	110	<0.5	<50	4.00	425	47	<2	5.5	<50	1.5	49
97KFA3540h	97KFA3638w	sw	11.6	17.0	24.0	68	0.5	50	4.50	465	105	2	5	50	2.5	50
97KFA3540h	97KFA3639w	sw	11.6	24.0	29.0	61	1.5	50	6.50	515	460	2	15.5	200	6.5	88
97KFA3540h	97KFA3640w	sw	11.6	34.0	40.0	70	1.0	50	6.00	550	340	2	16	150	5.0	110
97KFA3540h	97KFA3641w	sw	11.6	40.0	44.0	37	1.0	50	8.00	520	290	<2	21	100	5.0	155
97KFA3540h	97KFA3642w	sw	11.6	44.0	50.0	8	<0.5	<50	3.50	175	13.5	2	23	<50	1.0	81
97KFA3540h	97KFA3643w	sw	11.6	50.0	60.0	11	1.0	<50	15.50	620	5.5	2	85	100	3.5	89
97KFA3540f	97KFA3644m	sw	11.6	0.0	4.0	80	2.5	50	7.50	725	380	2	25	200	8.5	84
97KFA3540f	97KFA3645m	sw	11.6	4.0	10.0	41	2.5	50	13.50	630	280	2	42	200	10.0	150
97KFA3540f	97KFA3646m	sw	11.6	10.0	15.0	12	0.5	<50	11.00	585	22	2	86	50	3.0	93
97KFA3540f	97KFA3647m	sw	11.6	15.0	23.0	6	1.0	50	22.00	655	<0.50	2	75	150	3.5	42
97KFA3540f	97KFA3648m	sw	11.6	32.0	50.0	41	1.5	100	24.00	940	1	6	85	400	10.5	15
97KFA3540f	97KFA3649m	sw	11.6	108.0	118.0	210	2.5	400	42.00	480	<0.50	10	86	1250	45.0	57
97KFA3540f	97KFA3650m	sw	11.6	118.0	150.0	185	2.0	400	35.00	525	<0.50	6	105	800	30.0	44
97KFA3540f	97KFA3651m	sw	11.6	150.0	166.0	165	2.0	350	36.00	540	<0.50	6	100	650	22.0	35
97KFA3540f	97KFA3652m	sw	11.6	166.0	200.0	125	2.5	250	32.00	610	<0.50	2	89	350	15.0	6
97KFA3540f	97KFA3653m	sw	11.6	200.0	220.0	145	4.0	150	33.00	570	<0.50	4	105	350	21.0	7
97KFA3540f	97KFA3654m	sw	11.6	220.0	240.0	195	6.0	100	32.00	490	<0.50	2	140	200	32.0	7.5
97KFA3540f	97KFA3655m	sw	11.6	240.0	247.0	200	4.5	150	36.00	755	<0.50	4	110	400	30.0	31

Geochemical Data (ICP-AES) for Feather Moss Samples

Sample Number	Sediment Type	Sect	Distance (km)	Lat (deg)	Long (deg)	Anal. Method	Ag ppm	Al %	Ba ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %
97KFA3520fm	Feather Moss	se	62.6	47.960550	-78.304250	ICP-AES	<0.2	0.03	22	0.29	<0.5	<1	2	10	0.04	0.81
97KFA3522fm	Feather Moss	se	73.2	47.825800	-78.282400	ICP-AES	<0.2	0.12	28	0.34	<0.5	2	10	9	0.21	0.95
97KIA3524fm	Feather Moss	sw	37.9	47.960267	-79.256400	ICP-AES	<0.2	0.02	25	0.35	<0.5	<1	2	15	0.03	0.84
97KFA3525fm	Feather Moss	se	29.5	48.136617	-78.668533	ICP-AES	<0.2	0.02	51	0.27	0.5	<1	<1	12	0.03	0.67
97KFA3526fm	Feather Moss	se	35.4	48.041900	-78.673417	ICP-AES	<0.2	0.02	28	0.21	<0.5	<1	<1	12	0.03	0.50
97KFA3528fm	Feather Moss	n	57.6	48.748867	-78.819033	ICP-AES	<0.2	0.1	29	0.34	<0.5	<1	5	14	0.16	0.58
97KFA3529fm	Feather Moss	n	80.8	48.965183	-78.864133	ICP-AES	<0.2	0.09	33	0.31	<0.5	<1	2	8	0.13	0.53
97KFA3530fm	Feather Moss	nw	91.7	48.957450	-79.654633	ICP-AES	<0.2	0.04	19	0.36	<0.5	<1	2	6	0.06	0.92
97KFA3531fm	Feather Moss	ne	29.5	48.449133	-78.755683	ICP-AES	<0.2	0.01	23	0.36	0.9	<1	<1	11	0.02	0.73
97KFA3532fm	Feather Moss	ne	23.2	48.374050	-78.757767	ICP-AES	<0.2	0.02	38	0.49	0.7	<1	<1	17	0.03	0.68
97KFA3533fm	Feather Moss	w	9.8	48.247533	-79.141150	ICP-AES	0.3	0.02	41	0.4	1.0	<1	<1	31	0.03	0.96
97KFA3534fm	Feather Moss	w	8.6	48.255367	-79.129550	ICP-AES	0.5	0.07	68	0.38	0.9	<1	2	66	0.08	0.77
97KFA3535fm	Feather Moss	w	8.6	48.136617	-78.668533	ICP-AES	0.5	0.06	63	0.38	3.0	<1	3	78	0.10	0.48
97KFA3537fm	Feather Moss	se	11.9	48.171250	-78.916817	ICP-AES	0.5	0.02	45	0.33	3.0	<1	1	78	0.06	0.69
97KFA3540fm	Feather Moss	sw	11.6	48.170233	-79.099750	ICP-AES	0.3	0.04	40	0.29	2.0	<1	<1	33	0.05	0.61

Sample Number	Sediment Type	Sect	Distance (km)	Lat (deg)	Long (deg)	Anal. Method	Mg %	Mn ppm	Na %	Ni ppm	P ppm	Pb ppm	Sr ppm	V ppm	Zn ppm
97KFA3520fm	Feather Moss	se	62.6	47.960550	-78.304250	ICP-AES	0.1	303	0.06	3	1708	10	6	<1	44
97KFA3522fm	Feather Moss	se	73.2	47.825800	-78.282400	ICP-AES	0.24	266	0.07	6	1753	21	11	5	265
97KIA3524fm	Feather Moss	sw	37.9	47.960267	-79.256400	ICP-AES	0.14	504	0.07	2	978	14	7	<1	83
97KFA3525fm	Feather Moss	se	29.5	48.136617	-78.668533	ICP-AES	0.12	319	0.06	2	1288	12	14	<1	173
97KFA3526fm	Feather Moss	se	35.4	48.041900	-78.673417	ICP-AES	0.09	319	0.05	2	966	14	4	<1	77
97KFA3528fm	Feather Moss	n	57.6	48.748867	-78.819033	ICP-AES	0.14	794	0.08	6	745	16	8	4	94
97KFA3529fm	Feather Moss	n	80.8	48.965183	-78.864133	ICP-AES	0.13	629	0.09	3	787	6	17	2	70
97KFA3530fm	Feather Moss	nw	91.7	48.957450	-79.654633	ICP-AES	0.15	351	0.07	3	1500	4	5	2	42
97KFA3531fm	Feather Moss	ne	29.5	48.449133	-78.755683	ICP-AES	0.13	414	0.07	2	1089	12	26	<1	39
97KFA3532fm	Feather Moss	ne	23.2	48.374050	-78.757767	ICP-AES	0.17	258	0.06	2	774	26	14	<1	76
97KFA3533fm	Feather Moss	w	9.8	48.247533	-79.141150	ICP-AES	0.25	397	0.06	1	1931	56	9	<1	49
97KFA3534fm	Feather Moss	w	8.6	48.255367	-79.129550	ICP-AES	0.17	951	0.07	3	1019	75	6	1	87
97KFA3535fm	Feather Moss	w	8.6	48.136617	-78.668533	ICP-AES	0.08	390	0.06	9	1067	237	10	2	144
97KFA3537fm	Feather Moss	se	11.9	48.171250	-78.916817	ICP-AES	0.15	133	0.07	4	945	117	15	<1	226
97KFA3540fm	Feather Moss	sw	11.6	48.170233	-79.099750	ICP-AES	0.14	152	0.07	4	903	119	11	1	164

Geochemical Data (INAA) for Feather Moss Samples

Sample Number	Sediment Type	Quad	Distance (km)	Lat (deg)	Long (deg)	Anal. Method	As ppm	Au ppb	Ba ppm	Br ppm	Ca %	Ce ppm	Co ppm	Cr ppm	Cs ppm
97KFA3520fm	Feather Moss	se	62.6	47.960550	-78.304250	INAA	0.34	3.0	24	1.90	0.36	0.4	0.5	10.0	0.39
97KFA3522fm	Feather Moss	se	73.2	47.825800	-78.282400	INAA	0.29	4.0	59	1.80	0.30	4.8	1.7	47.0	0.98
97KIA3524fm	Feather Moss	sw	37.9	47.960267	-79.256400	INAA	0.36	5.1	21	1.20	0.37	<0.1	0.6	15.0	0.31
97KFA3525fm	Feather Moss	se	29.5	48.136617	-78.668533	INAA	0.29	124.0	31	0.86	0.32	<0.1	0.7	3.0	0.21
97KFA3526fm	Feather Moss	se	35.4	48.041900	-78.673417	INAA	0.42	2.3	24	0.91	0.24	0.5	0.6	4.4	0.17
97KFA3528fm	Feather Moss	n	57.6	48.748867	-78.819033	INAA	0.47	4.3	37	1.10	0.42	2.0	1.1	9.2	0.33
97KFA3529fm	Feather Moss	n	80.8	48.965183	-78.864133	INAA	0.33	1.9	39	1.10	0.30	2.1	1.2	7.1	0.24
97KFA3530fm	Feather Moss	nw	91.7	48.957450	-79.654633	INAA	0.30	3.8	15	1.10	0.36	0.7	0.9	9.3	0.33
97KFA3531fm	Feather Moss	ne	29.5	48.449133	-78.755683	INAA	0.37	4.9	19	0.71	0.32	<0.1	0.5	7.4	0.44
97KFA3532fm	Feather Moss	ne	23.2	48.374050	-78.757767	INAA	0.73	13.6	27	2.50	0.38	<0.1	0.6	4.8	0.23
97KFA3533fm	Feather Moss	w	9.8	48.247533	-79.141150	INAA	0.85	14.6	26	1.70	0.49	<0.1	0.5	4.0	0.48
97KFA3534fm	Feather Moss	w	8.6	48.255367	-79.129550	INAA	1.60	18.0	49	1.20	0.38	0.8	0.9	4.6	0.18
97KFA3535fm	Feather Moss	w	8.6	48.136617	-78.668533	INAA	3.70	19.1	5	5.30	0.39	1.2	1.0	6.9	0.17
97KFA3537fm	Feather Moss	se	11.9	48.171250	-78.916817	INAA	2.70	36.6	44	2.70	0.28	0.8	0.8	3.9	0.50
97KFA3540fm	Feather Moss	sw	11.6	48.170233	-79.099750	INAA	1.60	32.1	32	2.00	0.31	0.8	0.7	1.4	0.32

Sample Number	Sediment Type	Quad	Distance (km)	Lat (deg)	Long (deg)	Anal. Method	Fe %	Hf ppm	Hg ppm	K %	La ppm	Lu ppm	Mo ppm	Na ppm	Nd ppm
97KFA3520fm	Feather Moss	se	62.6	47.960550	-78.304250	INAA	0.05	<0.05	0.06	0.81	0.31	<0.002	<0.2	310	<0.3
97KFA3522fm	Feather Moss	se	73.2	47.825800	-78.282400	INAA	0.25	0.34	<0.05	1.25	2.50	0.043	0.3	2110	2.1
97KIA3524fm	Feather Moss	sw	37.9	47.960267	-79.256400	INAA	0.04	<0.05	<0.05	0.64	0.31	<0.002	0.3	252	<0.3
97KFA3525fm	Feather Moss	se	29.5	48.136617	-78.668533	INAA	0.06	0.09	<0.05	0.67	0.32	<0.002	0.2	304	<0.3
97KFA3526fm	Feather Moss	se	35.4	48.041900	-78.673417	INAA	0.03	0.09	<0.05	0.63	0.24	0.008	<0.2	184	<0.3
97KFA3528fm	Feather Moss	n	57.6	48.748867	-78.819033	INAA	0.18	0.26	0.27	0.58	1.20	0.014	<0.2	1320	<0.3
97KFA3529fm	Feather Moss	n	80.8	48.965183	-78.864133	INAA	0.13	0.18	0.20	0.79	1.20	<0.002	<0.2	1050	<0.3
97KFA3530fm	Feather Moss	nw	91.7	48.957450	-79.654633	INAA	0.07	0.08	<0.05	0.85	0.45	0.014	<0.2	510	<0.3
97KFA3531fm	Feather Moss	ne	29.5	48.449133	-78.755683	INAA	0.03	<0.05	0.15	0.75	0.16	<0.002	0.6	161	<0.3
97KFA3532fm	Feather Moss	ne	23.2	48.374050	-78.757767	INAA	0.04	0.09	0.19	0.74	0.25	0.012	<0.2	165	<0.3
97KFA3533fm	Feather Moss	w	9.8	48.247533	-79.141150	INAA	0.03	0.10	<0.05	1.15	0.24	<0.002	<0.2	148	<0.3
97KFA3534fm	Feather Moss	w	8.6	48.255367	-79.129550	INAA	0.08	0.11	<0.05	0.95	0.55	0.015	<0.2	344	<0.3
97KFA3535fm	Feather Moss	w	8.6	48.136617	-78.668533	INAA	0.10	0.12	0.08	0.50	0.60	0.013	1.4	452	<0.3
97KFA3537fm	Feather Moss	se	11.9	48.171250	-78.916817	INAA	0.06	0.11	0.17	0.75	0.33	0.008	0.8	252	1.6
97KFA3540fm	Feather Moss	sw	11.6	48.170233	-79.099750	INAA	0.06	0.09	0.25	0.71	0.43	<0.002	<0.2	305	<0.3

Geochemical Data (INAA) for Feather Moss Samples

Sample Number	Sediment Type	Quad	Distance (km)	Lat (deg)	Long (deg)	Anal. Method	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sm ppm	Yb ppm	Zn ppm
97KFA3520fm	Feather Moss	se	62.6	47.960550	-78.304250	INAA	21	0.08	0.12	0.5	0.057	<0.006	60
97KFA3522fm	Feather Moss	se	73.2	47.825800	-78.282400	INAA	38	0.08	0.93	1.4	0.49	0.188	260
97KIA3524fm	Feather Moss	sw	37.9	47.960267	-79.256400	INAA	20	0.08	0.1	0.1	0.05	<0.006	91
97KFA3525fm	Feather Moss	se	29.5	48.136617	-78.668533	INAA	20	0.13	0.11	0.9	0.058	<0.006	170
97KFA3526fm	Feather Moss	se	35.4	48.041900	-78.673417	INAA	15	0.26	0.06	0.8	0.028	<0.005	84
97KFA3528fm	Feather Moss	n	57.6	48.748867	-78.819033	INAA	19	0.11	0.62	0.3	0.24	0.094	100
97KFA3529fm	Feather Moss	n	80.8	48.965183	-78.864133	INAA	13	0.05	0.42	0.4	0.19	0.066	88
97KFA3530fm	Feather Moss	nw	91.7	48.957450	-79.654633	INAA	19	0.04	0.17	<0.1	0.069	<0.006	54
97KFA3531fm	Feather Moss	ne	29.5	48.449133	-78.755683	INAA	33	0.16	0.05	0.6	0.02	<0.005	55
97KFA3532fm	Feather Moss	ne	23.2	48.374050	-78.757767	INAA	15	0.23	0.07	0.6	0.038	0.015	85
97KFA3533fm	Feather Moss	w	9.8	48.247533	-79.141150	INAA	21	0.38	0.07	<0.1	0.038	0.025	62
97KFA3534fm	Feather Moss	w	8.6	48.255367	-79.129550	INAA	19	0.81	0.2	<0.2	0.1	0.038	90
97KFA3535fm	Feather Moss	w	8.6	48.136617	-78.668533	INAA	17	1.10	0.27	0.9	0.14	0.046	150
97KFA3537fm	Feather Moss	se	11.9	48.171250	-78.916817	INAA	17	1.20	0.08	0.6	0.058	0.008	227
97KFA3540fm	Feather Moss	sw	11.6	48.170233	-79.099750	INAA	15	0.51	0.12	0.9	0.061	<0.006	150

Geochemical Data (ICP-AES) for Mineral Sediment Samples

Sample Number	Sect	Km from Smelter	From (cm)	To (cm)	Sediment Type	Lat (deg)	Long (deg)	Ag ppm	Al %	As ppm	Ba ppm	Ca %	Cd ppm	Co ppm	Cr ppm
97KFA3501	se	44.2	70	74	sand/gravel	48.083467	-78.488317	<0.2	0.63	6	<10	0.06	<0.5	<1	28
97KFA3503A	w	20.7	175	198	gyttja	48.278866	-79.289400	<0.2	1.65	<2	90	0.75	<0.5	12	54
97KFA3503B	w	20.7	198	210	gyttja	48.278866	-79.289400	<0.2	1.85	4	120	0.66	<0.5	13	63
97KFA3507	sw	18.9	153	166	clay; blue grey	48.113200	-79.160800	<0.2	3.22	6	190	0.71	<0.5	21	98
97KFA3508	s	18.4	98	100	silt; grey	48.089700	-78.995100	<0.2	1.67	<2	80	0.45	<0.5	18	69
97KFA3509	s	14.6			mineral sed; undiff.	48.128033	-79.047433	0.4	0.10	10	10	0.09	2.0	1	4
97KFA3510	n	11.1			clay	48.349667	-79.025000	<0.2	3.82	<2	190	1.29	<0.5	13	83
97KFA3511	n	33.1	169	174	silty clay; grey	48.554517	-79.038317	<0.2	2.72	<2	90	0.28	<0.5	12	64
97KFA3513B	sw	57.6	475	500	clayey silt; grey	48.007233	-79.694967	<0.2	2.39	8	120	3.71	<0.5	16	75
97KFA3513A	sw	57.6	450	475	clayey silt; grey	48.007233	-79.694967	<0.2	2.31	<2	120	2.95	<0.5	15	80
97KFA3514	w	63.1	92	100	mineral sed; undiff.	48.222800	-79.855500	<0.2	0.85	8	40	0.38	<0.5	5	51
97KFA3515	nw	44.9	74	78	silt	48.515250	-79.468400	0.2	4.40	4	160	0.60	<0.5	7	75
97KFA3516	nw	64.9	42	70	sand	48.482000	-79.807817	<0.2	1.39	8	30	0.17	<0.5	1	41
97KFA3519	e	61.9	30	40	mineral sed.; undiff	48.338650	-78.194133	<0.2	1.46	2	20	0.16	<0.5	2	86
97KFA3520C	se	62.6			sand/gravel (B-horiz)	47.960550	-78.304250	<0.2	1.25	6	10	0.22	<0.5	3	39
97KFA3520B	se	62.6			sand/gravel (C-horiz)	47.960550	-78.304250	<0.2	6.12	8	10	0.10	<0.5	3	112
97KFA3522	se	73.2	106	110	clay; grey	47.825800	-78.282400	<0.2	0.76	4	10	0.18	<0.5	3	56
97KFA3523	s	58.1	30	36	silt/clay	47.754833	-79.216600	<0.2	2.25	<2	120	0.43	<0.5	5	61
97KFA3524A	sw	37.9	350	358	clay; grey blue	47.960267	-79.256400	<0.2	1.71	12	120	0.90	0.5	13	55
97KFA3524B	sw	37.9	358	375	clay; grey blue	47.960267	-79.256400	<0.2	2.34	<2	110	0.64	<0.5	17	78
97KFA3525	se	29.5	129	132	silty sand	48.136617	-78.668533	<0.2	0.71	<2	<10	0.16	<0.5	1	28
97KFA3526	se	35.4	83	90	sand	48.041900	-78.673417	<0.2	2.41	<2	10	0.25	<0.5	5	52
97KFA3528	n	57.6	96	100	clay; grey	48.748867	-78.819033	<0.2	3.96	<2	190	0.91	<0.5	17	96
97KFA3529	n	80.8	140	150	mineral sed; undiff.	48.965183	-78.864133	<0.2	1.44	2	60	0.87	<0.5	10	41
97KFA3530	nw	91.7	54	84	clay; blue	48.957450	-79.654633	<0.2	3.20	<2	160	0.64	<0.5	15	81
97KFA3531	ne	29.5	40	50	mineral sediment	48.449133	-78.755683	<0.2	1.39	<2	10	0.41	<0.5	4	44
97KFA3532	ne	23.2	194	200	silty clay; blue	48.374050	-78.757767	<0.2	2.15	<2	100	1.57	<0.5	14	64
97KFA3533A	w	9.8	238	242	clay; blue	48.247533	-79.141150	<0.2	2.30	12	110	1.20	<0.5	14	70
97KFA3533B	w	9.8	242	272	clay; blue	48.247533	-79.141150	<0.2	2.46	<2	120	1.24	<0.5	14	74
97KFA3534	w	8.6	198	200	clay	48.255367	-79.129550	<0.2	2.44	<2	150	0.60	<0.5	17	78
97KFA3536	nw	7.1	45	58	diamicton	48.307500	-79.061983	<0.2	2.29	<2	110	0.54	<0.5	23	66
97KFA3537A	se	11.9	120	140	clay	48.171250	-78.916817	<0.2	1.72	<2	80	0.72	<0.5	12	67
97KFA3537B	se	11.9	140	150	clay	48.171250	-78.916817	<0.2	2.63	10	130	0.82	<0.5	17	96
97KFA3540	sw	11.6	249	272	clay; blue grey	48.170233	-79.099750	<0.2	1.82	4	70	0.85	<0.5	12	67

Geochemical Data (ICP-AES) for Mineral Sediment Samples

Sample Number	Sect	Km from Smelter	From (cm)	To (cm)	Cu ppm	Fe %	Hg ppb	K %	La ppm	Mg %	Mn ppm	Na %	Ni ppm	P ppm	Pb ppm	Sc ppm	Sr ppm	Ti %	V ppm	Zn ppm
97KFA3501	se	44.2	70	74	5	0.08	40	0.01	<10	0.02	30	<0.0	2	190	2	1	8	0.06	9	<2
97KFA3503A	w	20.7	175	198	123	2.03	30	0.14	20	0.76	200	0.03	35	390	8	6	38	0.10	38	58
97KFA3503B	w	20.7	198	210	71	2.40	30	0.19	30	0.95	255	0.03	35	450	4	6	36	0.12	46	62
97KFA3507	sw	18.9	153	166	40	3.86	<10	0.50	30	1.52	405	0.04	50	440	10	8	36	0.16	64	94
97KFA3508	s	18.4	98	100	60	2.01	10	0.10	20	0.84	235	0.01	76	420	4	5	27	0.08	39	94
97KFA3509	s	14.6			68	0.15	60	0.01	<10	0.03	15	<0.0	5	280	90	<1	7	<0.0	1	76
97KFA3510	n	11.1			50	2.73	70	0.28	50	0.99	400	0.03	42	320	8	8	69	0.14	48	80
97KFA3511	n	33.1	169	174	20	1.84	<10	0.15	10	0.81	190	0.01	30	260	6	5	24	0.14	39	62
97KFA3513B	sw	57.6	475	500	32	3.10	10	0.42	30	2.08	520	0.04	43	450	8	6	65	0.12	53	72
97KFA3513A	sw	57.6	450	475	35	3.00	20	0.39	30	2.09	450	0.03	43	460	12	6	53	0.12	52	72
97KFA3514	w	63.1	92	100	15	1.03	40	0.03	50	0.27	85	<0.0	17	380	2	6	28	0.06	103	12
97KFA3515	nw	44.9	74	78	30	2.18	100	0.32	40	0.56	175	<0.0	25	500	14	6	26	0.07	41	60
97KFA3516	nw	64.9	42	70	5	0.35	70	0.05	<10	0.11	30	<0.0	7	320	10	1	13	0.09	17	8
97KFA3519	e	61.9	30	40	7	0.41	10	0.02	10	0.13	45	<0.0	25	340	6	3	13	0.10	15	12
97KFA3520C	se	62.6			9	0.77	10	0.03	10	0.21	70	<0.0	13	470	<2	3	15	0.08	15	10
97KFA3520B	se	62.6			15	2.90	90	0.01	<10	0.10	50	<0.0	11	780	6	5	7	0.09	34	14
97KFA3522	se	73.2	106	110	8	0.46	<10	0.02	30	0.21	60	<0.0	15	80	2	3	14	0.08	47	10
97KFA3523	s	58.1	30	36	14	1.30	80	0.08	10	0.34	125	0.01	21	210	6	3	40	0.06	23	24
97KFA3524A	sw	37.9	350	358	69	1.95	40	0.22	30	0.70	265	0.05	46	400	4	5	58	0.08	44	92
97KFA3524B	sw	37.9	358	375	31	3.13	<10	0.34	30	1.29	400	0.04	43	560	10	7	39	0.15	57	78
97KFA3525	se	29.5	129	132	4	0.25	<10	0.01	<10	0.10	35	<0.0	6	390	<2	2	13	0.08	14	6
97KFA3526	se	35.4	83	90	8	1.04	10	0.04	<10	0.36	100	<0.0	18	270	<2	3	18	0.11	32	22
97KFA3528	n	57.6	96	100	23	3.73	30	0.55	40	1.55	385	0.03	44	430	10	9	57	0.15	66	108
97KFA3529	n	80.8	140	150	18	1.59	<10	0.16	10	0.65	185	0.01	20	570	2	4	38	0.11	34	38
97KFA3530	nw	91.7	54	84	29	3.15	10	0.41	30	1.20	290	0.03	39	440	10	7	35	0.14	57	80
97KFA3531	ne	29.5	40	50	6	0.99	30	0.03	10	0.29	110	<0.0	20	490	<2	3	23	0.12	25	16
97KFA3532	ne	23.2	194	200	29	2.77	<10	0.27	20	1.53	330	0.04	35	530	6	6	44	0.13	50	62
97KFA3533A	w	9.8	238	242	31	2.63	10	0.30	30	1.14	300	0.04	34	650	4	6	63	0.13	51	94
97KFA3533B	w	9.8	242	272	21	2.97	<10	0.36	20	1.47	335	0.05	37	520	6	7	49	0.14	54	72
97KFA3534	w	8.6	198	200	33	2.92	<10	0.35	20	1.20	375	0.04	42	490	8	6	27	0.13	51	78
97KFA3536	nw	7.1	45	58	86	2.87	20	0.16	20	0.91	420	0.02	37	570	8	7	28	0.12	53	176
97KFA3537A	se	11.9	120	140	32	2.39	<10	0.19	10	0.96	280	0.04	35	510	6	5	40	0.12	47	56
97KFA3537B	se	11.9	140	150	40	3.45	<10	0.36	20	1.47	450	0.07	48	550	6	7	47	0.18	63	82
97KFA3540	sw	11.6	249	272	21	2.35	<10	0.16	10	1.07	290	0.04	33	490	6	6	42	0.14	49	48

APPENDIX F

SUMMARY STATISTICAL DATA FOR PEAT AND FEATHER MOSS SAMPLES

Mean	Mean
Std. Dev.	Standard Deviation
Std. Error	Standard Error
Count	No of Samples
Minimum	Minimum Value
Maximum	Maximum Value
Variance	Variance
Coef. Var.	Coefficient of Variance
Range	Range
Sum	Sum
Sum Squares	Sum of Squares
10th %	Value at 10th percentile
25th %	Value at 25th percentile
50th %	Value at 50th percentile
75th %	Value at 75th percentile
90th %	Value at 90th percentile
Det. Limit	Detection Limit

Summary Statistics for Geochemical Data (ICP-AES) for Peat Hummock Samples

	Bulk Density g/cm^3	Ash Content (%)	Ag ppm	Al ppm	As ppm	Ba ppm	Ca %
Mean	0.020	3.98	0.27	1293	4	21	0.237
Std. Dev.	0.018	4.98	0.32	2502	6	15	0.154
Std. Error	0.002	0.36	0.02	181	0	1	0.011
Count	137.000	189.00	190.00	190	190	190	190.000
Minimum	0.003	0.01	0.05	50	1	3	0.015
Maximum	0.105	44.77	1.80	27000	48	85	1.070
Variance	0.000	24.81	0.11	6258885	40	215	0.024
Coef. Var.	0.924	1.25	1.22	2	1	1	0.651
Range	0.101	44.77	1.75	26950	47	83	1.055
Sum	2.690	752.75	50.45	245750	818	3993	45.070
Sum Squares	0.098	7663.05	33.22	1500787500	11112	124531	15.195
10th %	0.007	1.31	0.05	150	1	5	0.095
25th %	0.009	1.66	0.05	250	1	10	0.145
50th %	0.014	2.45	0.10	450	1	20	0.205
75th %	0.022	4.35	0.40	1300	4	30	0.280
90th %	0.042	7.51	0.70	3750	12	40	0.410
Det. Limit	0.001	0.01	0.10	50	2	5	0.005

	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K ppm	Mg %
Mean	3.7	0.87	6.8	57.25	0.157	2192	0.069
Std. Dev.	5.0	1.37	5.5	93.81	0.262	2254	0.046
Std. Error	0.4	0.10	0.4	6.81	0.019	163	0.003
Count	190.0	190.00	190.0	190.00	190.000	190	190.000
Minimum	0.1	0.25	1.5	2.00	0.005	150	0.015
Maximum	22.0	11.00	40.0	570.00	1.940	10000	0.360
Variance	24.9	1.86	29.9	8800.91	0.069	5078879	0.002
Coef. Var.	1.4	1.56	0.8	1.64	1.672	1	0.661
Range	21.9	10.75	38.5	568.00	1.935	9850	0.345
Sum	699.2	165.75	1282.5	10878.00	29.820	416500	13.185
Sum Squares	7282.5	496.56	14308.3	2286165.50	17.698	1872920000	1.313
10th %	0.1	0.25	3.5	3.50	0.020	475	0.035
25th %	0.4	0.25	4.5	6.00	0.030	650	0.045
50th %	1.3	0.25	5.0	14.25	0.055	1050	0.055
75th %	4.6	0.50	7.5	73.00	0.155	3800	0.085
90th %	12.8	2.25	10.0	157.50	0.445	5750	0.113
Det. Limit	0.2	0.50	0.5	0.50	0.005	50	0.005

Summary Statistics for Geochemical Data (ICP-AES) for Peat Hummock Samples

	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm
Mean	198	0.56	44	3.79	465	99.54	2
Std. Dev.	212	0.54	31	3.33	258	136.16	1
Std. Error	15	0.04	2	0.24	19	9.88	0
Count	190	190.00	190	190.00	190	190.00	190
Minimum	7	0.25	25	0.25	120	0.25	1
Maximum	1090	3.00	200	21.00	1570	660.00	8
Variance	45133	0.29	983	11.09	66396	18538.96	1
Coef. Var.	1	0.96	1	0.88	1	1.37	1
Range	1083	2.75	175	20.75	1450	659.75	7
Sum	37549	107.00	8325	720.75	88285	18913.25	306
Sum Squares	15950829	115.00	550625	4829.94	53571225	5386553.56	676
10th %	27	0.25	25	0.50	218	4.50	1
25th %	58	0.25	25	1.50	280	12.50	1
50th %	100	0.25	25	3.00	410	45.50	1
75th %	280	0.50	50	5.00	575	105.00	2
90th %	530	1.50	75	7.50	758	325.00	2
Det. Limit	1	0.50	50	0.50	5	0.50	2

	Sr ppm	Ti ppm	V ppm	Zn ppm
Mean	10.25	67	2.2	66.88
Std. Dev.	10.46	124	3.7	64.14
Std. Error	0.76	9	0.3	4.65
Count	190.00	190	190.0	190.00
Minimum	0.25	25	0.3	11.00
Maximum	85.00	1100	29.0	360.00
Variance	109.50	15290	13.4	4113.29
Coef. Var.	1.02	2	1.7	0.96
Range	84.75	1075	28.8	349.00
Sum	1947.00	12700	420.0	12707.50
Sum Squares	40647.38	3738750	3466.8	1627308.75
10th %	1.75	25	0.3	19.50
25th %	3.50	25	0.5	27.00
50th %	7.00	25	0.5	40.00
75th %	14.00	50	2.5	81.00
90th %	21.50	150	5.5	157.50
Det. Limit	0.50	50	0.5	0.50

Summary Statistics for Geochemical Data (ICP-AES) for Peat Hollow Samples

	Bulk Density g/cm^3	Ash Content (%)	Ag ppm	Al ppm	As ppm	Ba ppm	Ca %
Mean	0.12	13.8	0.26	7027	3	50	0.882
Std. Dev.	0.07	12.8	0.29	7148	4	36	0.818
Std. Error	0.01	1.2	0.03	661	0.4	3	0.076
Count	107	117	117.00	117	117	117	117.000
Minimum	0.01	1.5	0.05	150	1	5	0.040
Maximum	0.42	60.7	1.70	33000	20	185	3.600
Variance	0.01	164.4	0.08	51096963	17	1261	0.669
Coef. Var.	0.57	0.9	1.10	1	1	1	0.927
Range	0.41	59.2	1.65	32850	19	180	3.560
Sum	13.17	1612.1	30.60	822150	327	5890	103.225
Sum Squares	2.15	41288.4	17.63	11700000000	2937	442800	168.722
10th %	0.03	2.7	0.05	1150	1	16	0.113
25th %	0.07	5.7	0.10	1850	1	25	0.245
50th %	0.12	8.7	0.10	4200	1	40	0.540
75th %	0.16	17.4	0.30	10125	1	65	1.347
90th %	0.20	32.9	0.58	16360	10	93	2.280
Det. Limit			0.10	50	2	5	0.005

	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K ppm	Mg %
Mean	2.2	1.42	20.8	67.66	0.435	1063	0.150
Std. Dev.	3.8	1.61	33.4	107.27	0.414	1196	0.155
Std. Error	0.4	0.15	3.1	9.92	0.038	111	0.014
Count	117.0	117.00	117	117.00	117.000	117	117.000
Minimum	0.1	0.25	1.5	2.00	0.010	25	0.005
Maximum	20.0	10.50	300.0	650.00	2.200	7200	0.910
Variance	14.6	2.60	1112.3	11506.06	0.172	1430049	0.024
Coef. Var.	1.7	1.14	1.6	1.59	0.953	1	1.032
Range	19.9	10.25	298.5	648.00	2.190	7175	0.905
Sum	260.0	166.00	2438.5	7916.50	50.885	124400	17.535
Sum Squares	2271.4	537.25	179854.3	1870353.00	42.053	298000000	5.404
10th %	0.1	0.25	5.5	5.50	0.060	150	0.025
25th %	0.2	0.50	7.0	11.00	0.156	300	0.055
50th %	0.6	1.00	10.5	23.00	0.320	700	0.095
75th %	2.2	2.00	25.0	65.25	0.572	1300	0.203
90th %	8.0	2.90	39.8	165.00	1.082	2380	0.360
Det. Limit	0.2	0.50	0.5	0.50	0.005	50	0.005

Summary Statistics for Geochemical Data (ICP-AES) for Peat Hollow Samples

	Mn ppm	Mo ppm	Na ppm	Ni ppm	P ppm	Pb ppm	Sb ppm
Mean	91	2.10	95	9.29	534	46.1	3
Std. Dev.	92	2.22	98	9.09	231	100.0	2
Std. Error	9	0.21	9	0.84	21	9.2	0.2
Count	117	117.00	117	117.00	117	117	117
Minimum	2	0.25	25	0.25	160	0.3	1
Maximum	480	12.50	450	42.00	1400	580.0	14
Variance	8519	4.94	9639	82.69	53522	10005.4	6
Coef. Var.	1	1.06	1	0.98	0	2.2	1
Range	478	12.25	425	41.75	1240	579.7	13
Sum	10609	245.50	11100	1087.25	62520	5395.0	301
Sum Squares	1950223	1087.63	2171250	19694.94	40000000	1409399.0	1423
10th %	11	0.50	25	1.10	283	0.3	1
25th %	30	0.50	25	4.38	380	0.3	1
50th %	57	1.50	50	6.00	490	2.0	2
75th %	126	2.50	100	11.00	630	37.0	3
90th %	199	4.90	250	24.80	822	164.0	6
Det. Limit	1	0.50	50	0.50	5	0.5	2

	Sr ppm	Ti ppm	V ppm	Zn ppm
Mean	47.70	296	14.8	41.53
Std. Dev.	37.19	308	25.5	47.27
Std. Error	3.44	28	2.4	4.37
Count	117.00	117	117.0	117.00
Minimum	2.50	25	0.3	0.25
Maximum	165.00	1450	250.0	190.00
Variance	1383.18	94709	652.7	2233.99
Coef. Var.	0.78	1	1.7	1.14
Range	162.50	1425	249.7	189.75
Sum	5580.50	34625	1736.8	4858.50
Sum Squares	426619.80	21233125	101498.8	460895.10
10th %	9.10	25	2.0	2.50
25th %	15.50	50	3.5	6.00
50th %	33.00	200	8.5	24.00
75th %	80.00	450	17.8	58.00
90th %	99.60	790	30.0	114.00
Det. Limit	0.50	50	1	0.50

Summary Statistics for Geochemical Data (ICP-MS) for Feather Moss Samples

	Ag ppm	Al %	Ba ppm	Ca %	Cd ppm	Co ppm	Cr ppm
Mean	0.21	0.033	37	0.340	0.92	0.60	2.1
Std. Dev.	0.17	0.049	15	0.064	0.97	0.39	2.5
Std. Error	0.04	0.013	4	0.017	0.25	0.10	0.6
Count	15.00	15.000	15	15.000	15.00	15.00	15.0
Minimum	0.10	0.000	19	0.210	0.25	0.50	0.5
Maximum	0.50	0.100	68	0.490	3.00	2.00	10.0
Variance	0.03	0.002	218	0.004	0.94	0.15	6.3
Coef. Var.	0.81	1.464	0	0.189	1.06	0.65	1.2
Range	0.40	0.100	49	0.280	2.75	1.50	9.5
Sum	3.10	0.500	553	5.100	13.75	9.00	32.0
Sum Squares	1.03	0.050	23441	1.792	25.80	7.50	156.5
10th %	0.10	0.000	22	0.270	0.25	0.50	0.5
25th %	0.10	0.000	26	0.295	0.25	0.50	0.5
50th %	0.10	0.000	33	0.340	0.50	0.50	2.0
75th %	0.30	0.100	44	0.375	0.98	0.50	2.0
90th %	0.50	0.100	63	0.400	3.00	0.50	5.0
Det. Limit	0.10	0.005	5	0.005	0.20	0.50	0.5

	Cu ppm	Fe %	K %	Mg %	Mn ppm	Na %	Ni ppm
Mean	26.67	0.071	0.715	0.147	412	0.067	3.47
Std. Dev.	25.78	0.056	0.159	0.048	226	0.010	2.10
Std. Error	6.66	0.015	0.041	0.012	58	0.002	0.54
Count	15.00	15.000	15.000	15.000	15	15.000	15.00
Minimum	6.00	0.020	0.480	0.080	133	0.050	1.00
Maximum	78.00	0.210	0.960	0.250	951	0.090	9.00
Variance	664.81	0.003	0.025	0.002	51149	0.000	4.41
Coef. Var.	0.97	0.796	0.222	0.325	1	0.143	0.61
Range	72.00	0.190	0.480	0.170	818	0.040	8.00
Sum	400.00	1.060	10.720	2.200	6180	1.010	52.00
Sum Squares	19974.00	0.119	8.015	0.354	3262244	0.069	242.00
10th %	8.00	0.030	0.500	0.090	152	0.060	2.00
25th %	10.25	0.030	0.587	0.122	275	0.060	2.00
50th %	14.00	0.050	0.690	0.140	351	0.070	3.00
75th %	32.50	0.095	0.832	0.165	482	0.070	4.00
90th %	78.00	0.160	0.950	0.240	794	0.080	6.00
Det. Limit	0.50	0.005	0.005	0.005	1	0.005	0.50

	P ppm	Pb ppm	Sr ppm	V ppm	Zn ppm
Mean	1164	49.27	10.87	1.4	108.87
Std. Dev.	383	64.68	5.73	1.4	70.00
Std. Error	99	16.70	1.48	0.4	18.07
Count	15	15.00	15.00	15.0	15.00
Minimum	745	4.00	4.00	0.5	39.00
Maximum	1931	237.00	26.00	5.0	265.00
Variance	146796	4184.07	32.84	2.0	4900.27
Coef. Var.	0	1.31	0.53	1.0	0.64
Range	1186	233.00	22.00	4.5	226.00
Sum	17453	739.00	163.00	21.0	1633.00
Sum Squares	22362293	94985.00	2231.00	57.0	246383.00
10th %	774	6.00	5.00	0.5	42.00
25th %	914	12.00	6.25	0.5	54.25
50th %	1019	16.00	10.00	0.5	83.00
75th %	1447	70.25	14.00	2.0	159.00
90th %	1753	119.00	17.00	4.0	226.00
Det. Limit	5	0.50	0.50	0.5	0.50

Summary Statistics for Geochemical Data (INAA) for Feather Moss Samples

	As ppm	Au ppb	Ba ppm	Br ppm	Ca %	Ce ppm	Co ppm
Mean	0.96	19.2	30	1.7	0.35	1.0	0.8
Std. Dev.	1.03	31.0	14	1.2	0.06	1.3	0.3
Std. Error	0.27	8.0	4	0.3	0.02	0.3	0.1
Count	15.00	15.0	15	15.0	15.00	15.0	15.0
Minimum	0.29	1.9	5	0.7	0.24	0.1	0.5
Maximum	3.70	124.0	59	5.3	0.49	4.8	1.7
Variance	1.06	960.5	192	1.3	0.00	1.6	0.1
Coef. Var.	1.07	1.6	0	0.7	0.18	1.3	0.4
Range	3.41	122.1	54	4.6	0.25	4.8	1.2
Sum	14.35	287.3	452	26.1	5.22	14.4	12.3
Sum Squares	28.50	18949.8	16302	64.0	1.87	35.7	11.6
10th %	0.29	2.3	15	0.9	0.28	0.1	0.5
25th %	0.33	3.9	22	1.1	0.30	0.1	0.6
50th %	0.42	5.1	27	1.2	0.36	0.7	0.7
75th %	1.41	18.8	39	2.0	0.38	1.1	1.0
90th %	2.70	36.6	49	2.7	0.42	2.1	1.2
Det. Limit	0.00	0.1	5	1.0	0.20	3.0	1.0

	Cr ppm	Cs ppm	Fe %	Hf ppm	Hg ppm	K %	La ppm
Mean	9.2	0.35	0.079	0.11	0.10	0.785	0.61
Std. Dev.	11.0	0.21	0.062	0.09	0.09	0.202	0.61
Std. Error	2.8	0.05	0.016	0.02	0.02	0.052	0.16
Count	15.0	15.00	15.000	15.00	15.00	15.000	15.00
Minimum	1.4	0.17	0.029	0.00	0.03	0.500	0.16
Maximum	47.0	0.98	0.245	0.34	0.27	1.250	2.50
Variance	121.0	0.04	0.004	0.01	0.01	0.041	0.38
Coef. Var.	1.2	0.58	0.778	0.83	0.89	0.258	1.01
Range	45.6	0.81	0.216	0.34	0.25	0.750	2.34
Sum	138.0	5.28	1.189	1.67	1.55	11.770	9.09
Sum Squares	2963.6	2.45	0.147	0.30	0.28	9.809	10.79
10th %	3.0	0.17	0.031	0.00	0.03	0.580	0.24
25th %	4.1	0.22	0.036	0.08	0.03	0.647	0.27
50th %	6.9	0.32	0.057	0.09	0.06	0.750	0.33
75th %	9.3	0.43	0.095	0.12	0.19	0.840	0.59
90th %	15.0	0.50	0.177	0.26	0.25	1.150	1.20
Det. Limit	1.0	0.50	0.050	0.50	0.05	0.050	0.10

Summary Statistics for Geochemical Data (INAA) for Feather Moss Samples

	Na ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sm ppm	Zn ppm
Mean	524	20	0.3	0.23	0.5	0.109	115
Std. Dev.	552	7	0.4	0.25	0.4	0.122	63
Std. Error	143	2	0.1	0.07	0.1	0.032	16
Count	15	15	15.0	15.00	15.0	15.000	15
Minimum	148	13	0.0	0.05	0.1	0.020	54
Maximum	2110	38	1.2	0.93	1.4	0.490	260
Variance	305087	46	0.1	0.06	0.2	0.015	4015
Coef. Var.	1	0	1.1	1.11	0.7	1.122	1
Range	1962	25	1.2	0.88	1.4	0.470	206
Sum	7867	302	5.2	3.39	8.2	1.637	1726
Sum Squares	8397195	6720	3.9	1.64	6.6	0.388	254820
10th %	161	15	0.1	0.06	0.1	0.028	55
25th %	201	16	0.1	0.07	0.2	0.041	68
50th %	305	19	0.2	0.12	0.6	0.058	90
75th %	496	21	0.5	0.25	0.9	0.130	150
90th %	1320	33	1.1	0.62	0.9	0.240	227
Det. Limit	10	1	0.1	0.10	0.1	0.001	50

APPENDIX G

DUPLICATE AND OTHER TEST DATA FOR PEAT, FEATHER MOSS, AND SEDIMENT SAMPLES

Lists of Duplicate with Original Data

Plots of Duplicate v.s. Original Geochemical Data for Peat Samples

Plots of Geochemcial Data for Samples of
Whole Peat v.s. *Sphagnum spp.* only

Data are listed and abbreviations are explained in Appendix E.

Geochemical Data for Peat Duplicate with Original Samples

Sample Number	Sediment Type	Analytical Method	Ag (ppm)	Al (ppm)	As (ppm)	Ba (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	K (ppm)	Mg (%)
97KFA3567fDup	peat	ICP-AES	<0.10	14800	<2	65	1.17	0.6	<0.5	21.0	46.0	0.380	1000	0.140
97KFA3567f	peat	ICP-AES	<0.10	1.58	<2	65	1.21	0.8	<0.5	25.0	55.0	0.490	1050	0.150
97KFA3576fDup	peat	ICP-AES	<0.10	2300	<2	45	0.56	2.8	2.0	6.5	25.0	0.630	450	0.095
97KFA3576f	peat	ICP-AES	0.30	0.23	<2	45	0.54	3.6	2.5	8.0	28.0	0.860	450	0.090
97KFA3585wDup	peat	ICP-AES	1.00	2200	14	50	0.56	12.5	2.0	4.5	400.0	0.670	450	0.075
97KFA3585w	peat	ICP-AES	1.00	0.24	18	55	0.61	16.0	2.5	8.5	490.0	0.870	550	0.080
97KFA3591fDup	peat	ICP-AES	0.20	6600	<2	70	2.20	0.4	2.0	14.5	54.0	0.490	450	0.200
97KFA3591f	peat	ICP-AES	0.10	0.62	<2	75	2.50	0.2	2.5	14.5	57.0	0.620	500	0.210
97KFA3605fDup	peat	ICP-AES	0.10	1750	2	30	0.32	6.4	1.5	4.0	70.0	0.190	450	0.055
97KFA3605f	peat	ICP-AES	0.20	0.18	8	35	0.37	7.0	1.5	7.0	70.0	0.210	300	0.060
97KFA3627wDup	peat	ICP-AES	<0.10	600	<2	15	0.17	1.0	<0.5	3.0	9.0	0.060	450	0.030
97KFA3627w	peat	ICP-AES	<0.10	0.06	<2	15	0.16	1.0	<0.5	6.0	7.0	0.060	350	0.025
97KFA3642wDup	peat	ICP-AES	0.10	500	8	15	0.29	3.6	0.5	1.5	80.0	0.075	100	0.030
97KFA3642w	peat	ICP-AES	0.10	0.06	10	15	0.31	3.8	0.5	4.5	84.0	0.080	150	0.035
97KFA3672wDup	peat	ICP-AES	<0.10	700	<2	20	0.15	1.6	0.5	2.5	4.5	0.105	600	0.045
97KFA3672w	peat	ICP-AES	0.10	0.09	<2	25	0.20	2.0	0.5	8.0	3.5	0.140	900	0.055
97KFA3704wDup	peat	ICP-AES	0.40	1650	14	20	0.82	8.2	0.5	4.5	140.0	0.230	400	0.065
97KFA3704w	peat	ICP-AES	0.30	0.13	10	15	0.72	7.8	1.0	6.5	120.0	0.190	350	0.060
97KFA3723wDup	peat	ICP-AES	<0.10	1300	2	20	0.27	7.2	1.0	5.5	19.0	0.170	650	0.070
97KFA3723w	peat	ICP-AES	0.10	0.14	8	25	0.29	8.4	1.0	9.0	20.0	0.190	750	0.075
97KFA3746wDup	peat	ICP-AES	<0.10	1850	2	30	0.71	0.8	1.5	3.5	6.5	0.440	450	0.115
97KFA3746w	peat	ICP-AES	0.10	0.18	<2	30	0.67	1.0	1.5	8.0	5.0	0.430	500	0.115
97KFA3760fDup	peat	ICP-AES	0.30	3700	10	40	0.18	6.8	1.0	8.5	36.0	0.460	1000	0.060
97KFA3760f	peat	ICP-AES	0.40	0.27	10	35	0.13	7.6	1.0	10.0	38.0	0.380	700	0.055
97KFA3773fDup	peat	ICP-AES	<0.10	2900	<2	25	0.27	<0.2	<0.5	5.0	20.0	0.050	50	0.030
97KFA3773f	peat	ICP-AES	0.30	0.30	<2	25	0.29	<0.2	0.5	8.0	23.0	0.050	50	0.030
97KFA3792fDup	peat	ICP-AES	<0.10	1750	<2	20	2.20	0.2	<0.5	3.0	4.0	0.055	150	0.175
97KFA3792f	peat	ICP-AES	0.20	0.18	<2	25	2.60	0.2	<0.5	6.5	4.0	0.060	100	0.195
97KFA3811fDup	peat	ICP-AES	0.10	1500	<2	15	0.27	2.2	0.5	6.0	16.0	0.195	850	0.090
97KFA3811f	peat	ICP-AES	0.20	0.16	<2	15	0.27	2.2	0.5	7.5	14.0	0.185	800	0.085
97KFA3825wDup	peat	ICP-AES	<0.10	650	<2	15	0.15	0.8	<0.5	2.5	4.0	0.065	800	0.050
97KFA3825w	peat	ICP-AES	<0.10	0.06	<2	10	0.14	1.2	<0.5	4.5	3.0	0.060	0	0.045
97KFA3835wDup	peat	ICP-AES	<0.10	300	<2	10	0.20	0.4	<0.5	1.5	5.5	0.025	400	0.035
97KFA3835w	peat	ICP-AES	<0.10	0.03	<2	15	0.19	0.2	<0.5	4.5	4.5	0.025	0	0.030
97KFA3849fDup	peat	ICP-AES	0.50	9400	<2	60	0.11	3.6	0.5	10.0	170.0	0.280	550	0.030
97KFA3849f	peat	ICP-AES	0.50	0.92	<2	60	0.11	3.4	0.5	10.0	155.0	0.250	0	0.025
97KFA3854wDup	peat	ICP-AES	<0.10	550	<2	5	0.09	2.4	0.5	3.0	10.0	0.090	600	0.085
97KFA3854w	peat	ICP-AES	<0.10	0.07	2	5	0.09	2.4	0.5	2.5	10.5	0.095	0	0.090

Geochemical Data for Peat Duplicate with Original Samples

Sample Number	Sediment Type	Analytical Method	Mn (ppm)	Mo (ppm)	Na (ppm)	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Sr (ppm)	Ti (ppm)	V (ppm)	Zn (ppm)
97KFA3567fDup	peat	ICP-AES	31	1.5	150	5.0	680	3.5	<2	71	500	15.5	12
97KFA3567f	peat	ICP-AES	36	2.5	150	6.5	695	5.0	8	89	650	16.0	13
97KFA3576fDup	peat	ICP-AES	94	1.0	50	11.0	855	70.0	<2	59	100	11.0	34
97KFA3576f	peat	ICP-AES	105	2.0	50	8.0	880	82.0	2	70	150	10.5	32
97KFA3585wDup	peat	ICP-AES	52	2.0	50	9.0	795	430.0	<2	39	50	4.0	170
97KFA3585w	peat	ICP-AES	69	2.0	50	7.0	835	550.0	4	52	150	4.5	210
97KFA3591fDup	peat	ICP-AES	140	5.5	100	19.0	480	<0.5	<2	130	200	13.5	31
97KFA3591f	peat	ICP-AES	180	8.5	150	19.0	435	<0.5	4	165	250	14.5	25
97KFA3605fDup	peat	ICP-AES	49	0.5	<50	5.5	485	47.0	<2	22	50	3.5	61
97KFA3605f	peat	ICP-AES	52	1.0	<50	4.5	490	52.0	2	22	50	3.0	65
97KFA3627wDup	peat	ICP-AES	23	<0.5	<50	1.5	335	40.0	<2	6	<50	1.5	25
97KFA3627w	peat	ICP-AES	20	<0.5	<50	5.0	295	36.0	2	5	<50	1.5	23
97KFA3642wDup	peat	ICP-AES	7	<0.5	<50	3.5	185	13.0	<2	22	<50	0.5	78
97KFA3642w	peat	ICP-AES	8	<0.5	<50	3.5	175	13.5	2	23	<50	1.0	81
97KFA3672wDup	peat	ICP-AES	71	<0.5	<50	3.5	295	47.0	<2	11	<50	1.5	48
97KFA3672w	peat	ICP-AES	94	0.5	<50	5.0	385	64.0	2	13	50	2.0	59
97KFA3704wDup	peat	ICP-AES	26	1.5	<50	4.0	640	39.0	<2	27	50	3.0	100
97KFA3704w	peat	ICP-AES	29	2.0	<50	3.0	540	37.0	2	22	50	2.5	85
97KFA3723wDup	peat	ICP-AES	73	0.5	<50	5.0	295	81.0	<2	13	50	3.5	60
97KFA3723w	peat	ICP-AES	88	0.5	<50	3.5	310	92.0	<2	15	50	3.5	61
97KFA3746wDup	peat	ICP-AES	100	1.0	50	3.5	505	51.0	<2	28	50	3.5	31
97KFA3746w	peat	ICP-AES	105	0.5	50	6.0	500	56.0	2	28	50	3.5	30
97KFA3760fDup	peat	ICP-AES	74	2.5	100	9.0	660	96.0	<2	23	300	7.5	85
97KFA3760f	peat	ICP-AES	53	1.5	50	7.5	610	98.0	<2	16	200	6.0	89
97KFA3773fDup	peat	ICP-AES	16	1.0	<50	5.5	340	<0.5	<2	10	50	8.0	2
97KFA3773f	peat	ICP-AES	17	1.5	<50	5.5	340	0.5	<2	10	50	8.5	3
97KFA3792fDup	peat	ICP-AES	9	2.0	<50	0.5	285	0.5	<2	74	50	2.0	5
97KFA3792f	peat	ICP-AES	11	3.0	<50	<0.5	280	0.5	<2	80	50	2.0	5
97KFA3811fDup	peat	ICP-AES	74	0.5	50	2.5	390	45.0	<2	15	100	4.0	35
97KFA3811f	peat	ICP-AES	61	0.5	50	4.5	370	40.0	<2	14	100	4.0	32
97KFA3825wDup	peat	ICP-AES	38	<0.5	<50	0.5	205	26.0	<2	6	<50	1.0	24
97KFA3825w	peat	ICP-AES	34	<0.5	<50	1.0	215	26.0	<2	6	<50	1.0	22
97KFA3835wDup	peat	ICP-AES	280	<0.5	<50	1.5	265	13.0	<2	5	<50	0.5	23
97KFA3835w	peat	ICP-AES	290	<0.5	<50	3.5	300	11.5	<2	5	<50	0.5	20
97KFA3849fDup	peat	ICP-AES	21	1.5	50	12.5	1100	115.0	<2	13	250	9.0	88
97KFA3849f	peat	ICP-AES	20	1.0	<50	10.0	1065	100.0	2	13	250	8.5	84
97KFA3854wDup	peat	ICP-AES	36	<0.5	50	5.5	405	22.0	<2	12	<50	1.5	39
97KFA3854w	peat	ICP-AES	36	<0.5	50	5.5	400	23.0	<2	12	<50	1.5	41

Best Fit Trend Line for Peat ICP-AES Duplicate Data

Element	Count	Equation	R^2
Ag	19	more than 30% of values below detection limit	
Al	19	y=1.03x-107.27	0.99
As	19	more than 30% of values below detection limit	
Ba	19	y=1.02x+0.50	0.97
Ca	19	y=1.15x-481.67	0.99
Cd	19	y=1.18x-0.20	0.98
Co	19	more than 30% of values below detection limit	
Cr	19	y=0.93x+2.92	0.89
Cu	19	y=1.67x-6.19	0.98
Fe	19	y=1.25x-306.60	0.95
K	19	y=0.91x+49.91	0.80
Mg	19	y=1.10x-50.94	0.99
Mn	19	y=1.07x+0.29	0.97
Mo	19	y=1.42x-0.19	0.88
Na	19	more than 30% of values below detection limit	
Ni	19	y=0.79x+1.23	0.86
P	19	y=0.96x+13.20	0.97
Pb	19	y=1.27x-8.22	0.99
Sb	19	more than 30% of values below detection limit	
Sr	19	y=1.27x-4.30	0.99
Ti	19	more than 30% of values below detection limit	
V	19	y=1.01x-0.05	0.99
Zn	19	y=1.15x-5.93	0.97

Geochemical Data (INAA and ICP-MS) for Feather Moss Duplicate and Original Samples

Sample Number	Sediment Type	Analytical Method	As ppm	Au ppb	Ba ppm	Br ppm	Ca %	Ce ppm	Co ppm	Cr ppm	Cs ppm	Fe %	Hf ppm	Hg ppm	K %	La ppm	Lu ppm
97KFA3530fmDUP	feather moss	INAA	0.25	2.5	10	0.95	0.48	<0.1	0.6	3.4	0.22	0.048	0.07	<0.05	0.80	0.34	<0.001
97KFA3530fm	feather moss	INAA	0.30	3.8	15	1.10	0.36	0.7	0.9	9.3	0.33	0.07	0.08	<0.05	0.85	0.45	0.014

Sample Number	Sediment Type	Analytical Method	Mo ppm	Na ppm	Nd ppm	Rb ppm	Sb ppm	Sc ppm	Se ppm	Sm ppm	Yb ppm	Zn ppm
97KFA3530fmDUP	feather moss	INAA	0.3	343	<0.3	19	0.031	0.11	<0.1	0.047	0.025	48
97KFA3530fm	feather moss	INAA	<0.2	510	<0.3	19	0.04	0.17	<0.1	0.069	<0.006	54

Sample Number	Sediment Type	Analytical Method	Ag ppm	Al %	Ba ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	K %	Mg %	Mn ppm	Na %	Ni ppm	P ppm
97KFA3530fmDUP	feather moss	ICP-MS	<0.2	0.02	14	0.33	<0.5	<1	2	6	0.03	0.86	0.14	330	0.05	2	1379
97KFA3530fm	Feather Moss	ICP-MS	<0.2	0.04	19	0.36	<0.5	<1	2	6	0.06	0.92	0.15	351	0.07	3	1500

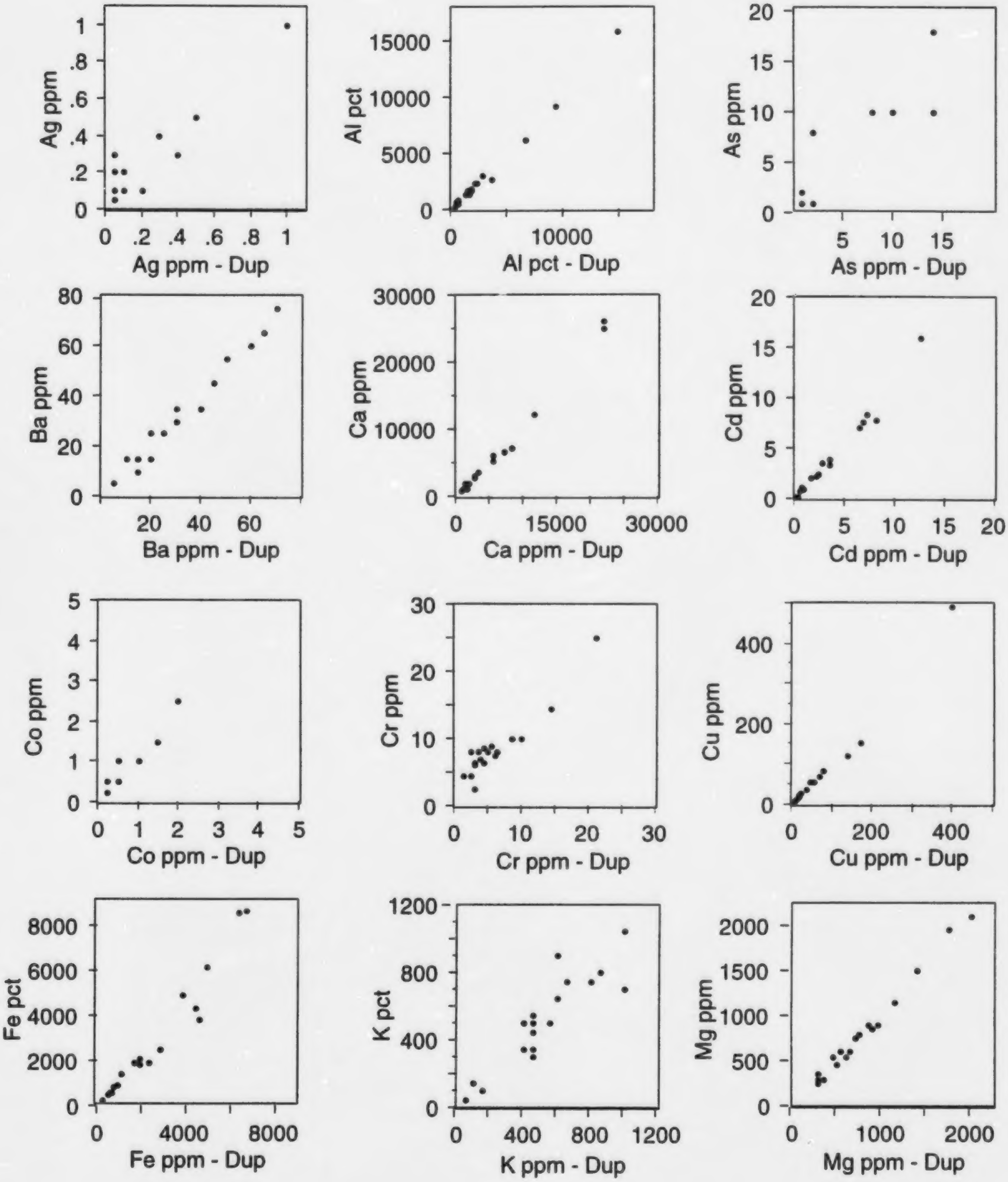
Sample Number	Sediment Type	Analytical Method	Pb ppm	Sr ppm	V ppm	Zn ppm
97KFA3530fmDUP	feather moss	ICP-MS	2	4	<1	40
97KFA3530fm	feather moss	ICP-MS	4	5	2	42

Geochemical Data for Mineral Sediment Duplicate and Original Samples

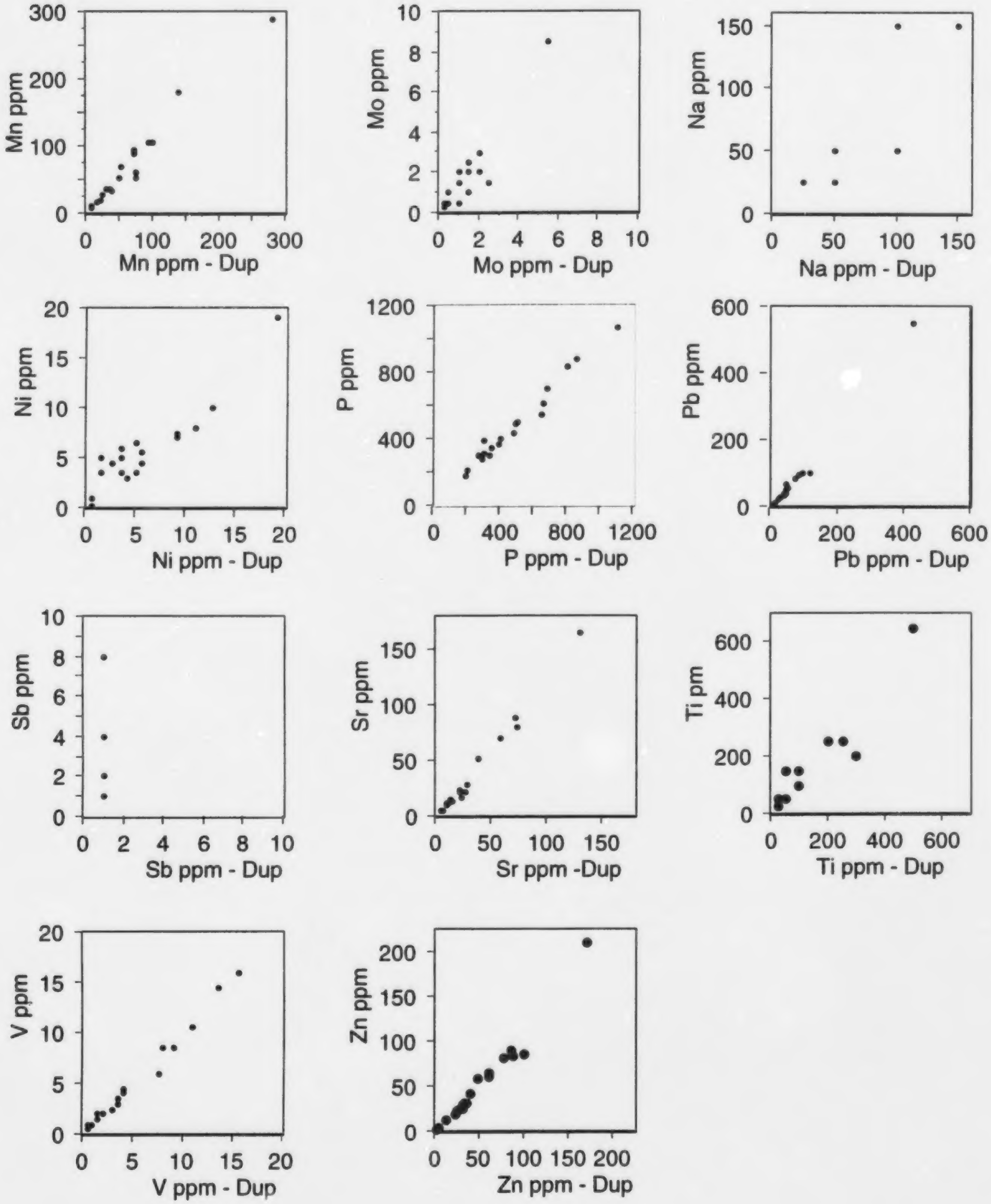
Sample Number	Sediment Type	Ag (ppm)	Al (%)	As (ppm)	Ba (ppm)	Ca (%)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (%)	Hg (ppb)	K (%)	La (ppm)	Mg (%)
97KIA3503ADup	gyttja	<.2	1.95	<2	100	0.9	<.5	14	61	128	2.29	30	0.18	20	0.86
97KIA3503A	gyttja	<0.2	1.65	<2	90	0.75	<0.5	12	54	123	2.03	30	0.14	20	0.76
97KIA3533ADup	clay; blue	<.2	2.43	6	110	1.24	<.5	14	74	30	2.75	10	0.32	30	1.18
97KIA3533A	clay; blue	<0.2	2.30	12	110	1.20	<0.5	14	70	31	2.63	10	0.30	30	1.14

Sample Number	Sediment Type	Mn (ppm)	Na (%)	Ni (ppm)	P (ppm)	Pb (ppm)	Sc (ppm)	Sr (ppm)	Ti (%)	V (ppm)	Zn (ppm)
97KIA3503A	gyttja	230	0.03	37	410	6	7	46	0.13	44	64
97KIA3503ADup	gyttja	200	0.03	35	390	8	6	38	0.10	38	58
97KIA3533A	clay; blue	310	0.04	35	690	6	6	64	0.14	52	100
97KIA3533ADup	clay; blue	300	0.04	34	650	4	6	63	0.13	51	94

Duplicate v.s. Original Geochemical Analyses (ICP-AES) for Peat Samples



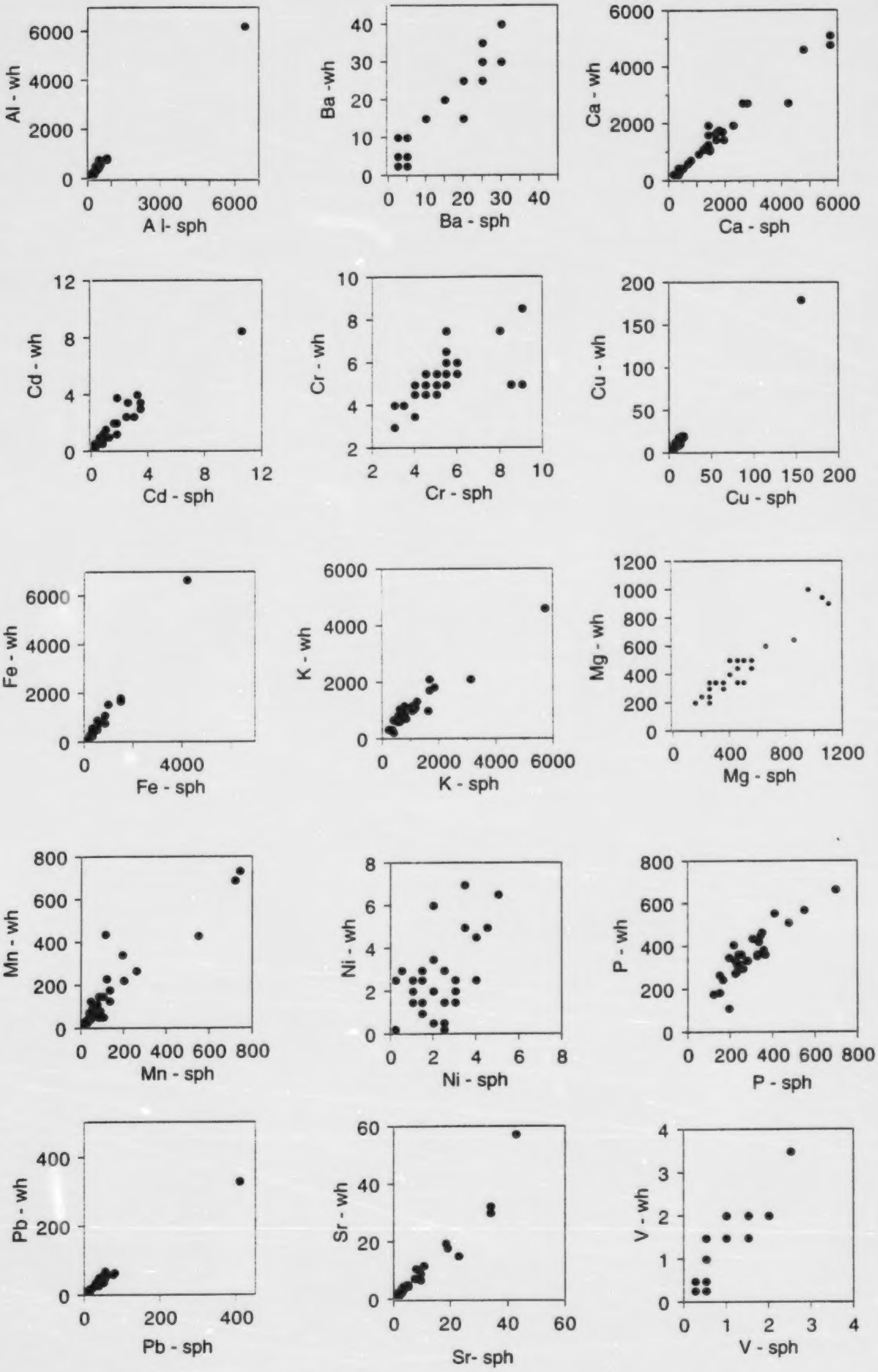
Duplicate v.s. Original Geochemical Analyses (ICP-AES) for Peat Samples



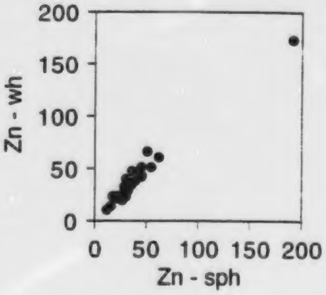
Best Fit Trend Line for Peat ICP-AES Duplicate Data

Element	Count	Equation	R^2
Ag	19	most analyses below detection limit	
Al	19	y=1.03x-107.27	0.99
As	19	y=0.98x+0.81	0.78
Ba	19	y=1.02x+0.50	0.97
Ca	19	y=1.15x-481.67	0.99
Cd	19	y=1.18x-0.20	0.98
Co	19	y=1.19x-0.04	0.96
Cr	19	y=0.93x+2.92	0.89
Cu	19	y=1.67x-6.19	0.98
Fe	19	y=1.25x-306.60	0.95
K	19	y=0.91x+49.91	0.80
Mg	19	y=1.10x-50.94	0.99
Mn	19	y=1.07x+0.29	0.97
Mo	19	y=1.42x-0.19	0.88
Na	19	y=0.97x-1.17	0.79
Ni	19	y=0.79x+1.23	0.86
P	19	y=0.96x+13.20	0.97
Pb	19	y=1.27x-8.22	0.99
Sb	19	all analyses below detection limit	
Sr	19	y=1.27x-4.30	0.99
Ti	19	most analyses below detection limit	
V	19	y=1.01x-0.05	0.99
Zn	19	y=1.15x-5.93	0.97

Sphagnum v.s. Whole Sample Geochemical (ICP-AES) Analyses for Peat Samples



Sphagnum v.s. Whole Sample Geochemical (ICP-AES) Analyses for Peat Samples



Best Fit Trend Line for Whole Peat v.s. Sphagnum ICP-AES Data

Element	Count	Equation	R^2
Al	30	y=0.96x+65.19	0.99
As	30	most values at or below detection limit	
Ba	30	y=1.12x+1.46	0.92
Cd	30	y=0.83x+0.35	0.91
Ca	30	y=0.85x+108.81	0.95
Cr	30	y=0.51x+2.51	0.46
Co	30	most values at or below detection limit	
Cu	30	y=1.15x+0.42	0.99
Fe	30	y=1.56x-159.82	0.98
Pb	30	y=0.80x+6.16	0.99
Mg	30	y=0.80x+78.33	0.91
Mn	30	y=0.90x+39.65	0.85
Mo	30	most values at or below detection limit	
Ni	30	y=0.81x+0.86	0.32
P	30	y=0.85x+112.96	0.79
K	30	y=0.75x+264.46	0.93
Ag	30	most values at or below detection limit	
Sr	30	y=1.05x-0.31	0.93
V	30	y=1.25x+.01	0.82
Zn	30	y=0.91x+4.67	0.97

APPENDIX H

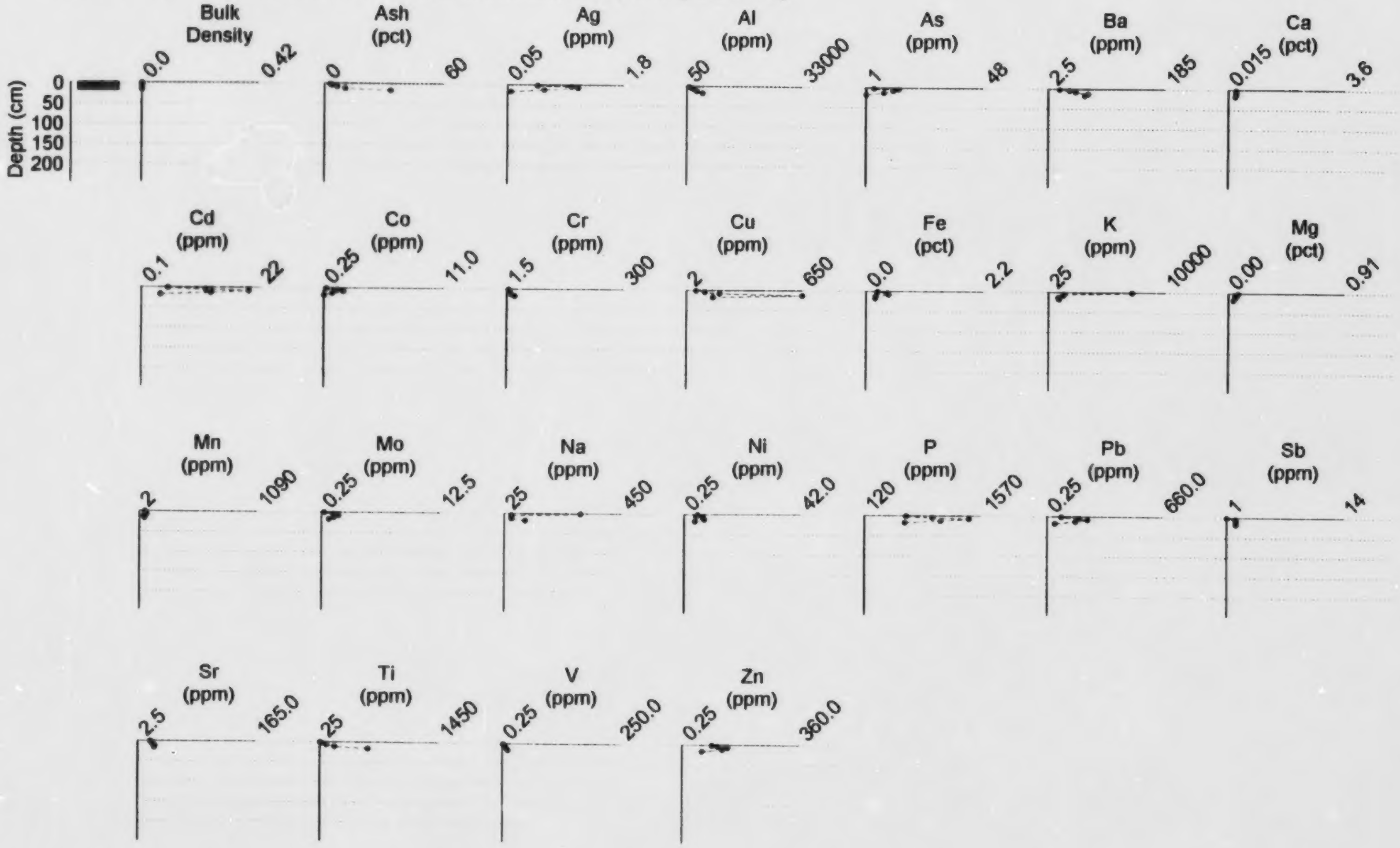
Geochemical Profiles of Peat in Hummock and Hollows

Also shown is colour legend, based on for Munsell colour classification from Appendix D.

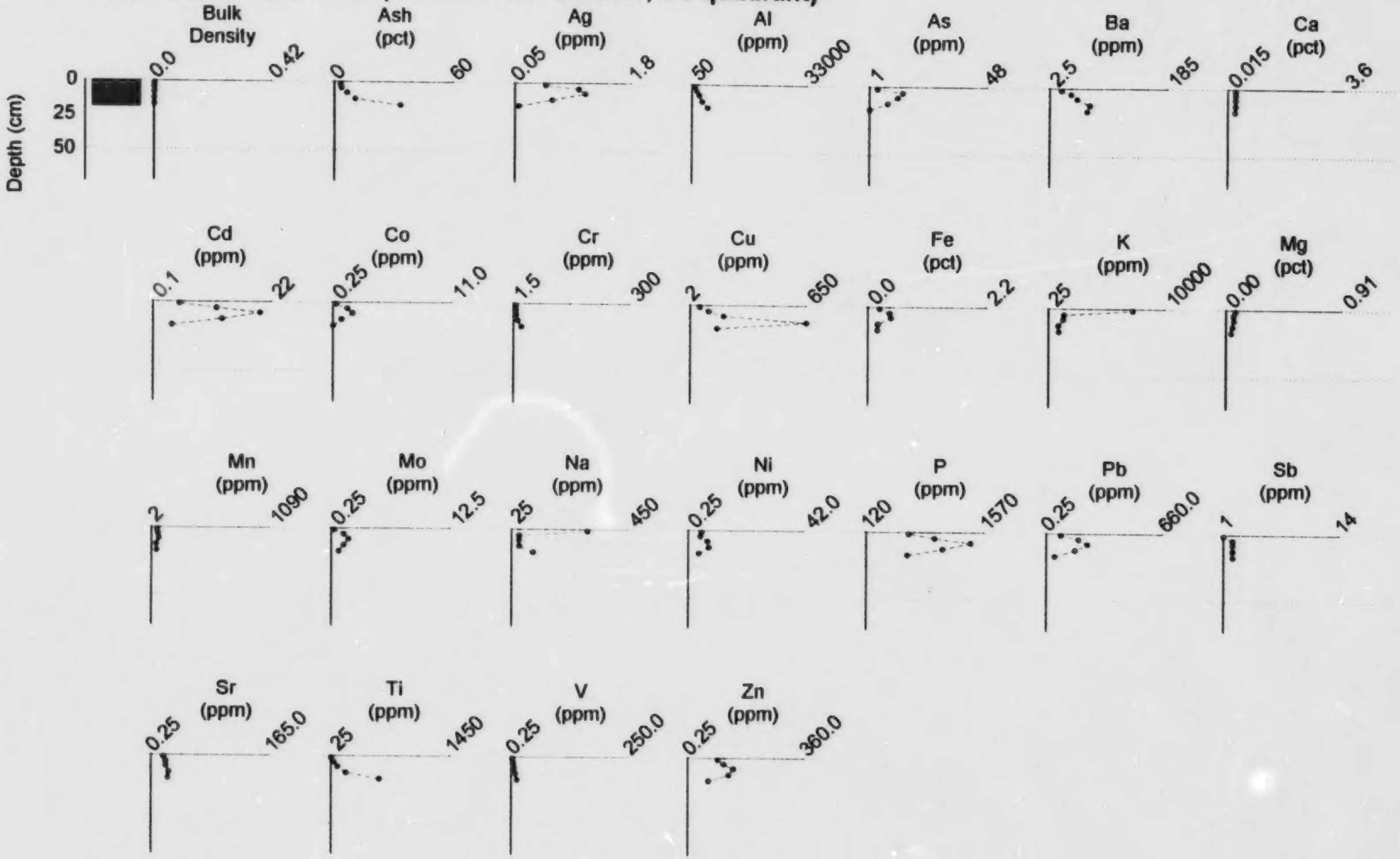
PEAT CORE LEGEND

- ▨ Living Green
- □ Olive
- ■ Tan
- ▨ Light Brown
- ▨ Medium Brown
- ■ Dark Brown
- ▨ Gray
- ■ Black

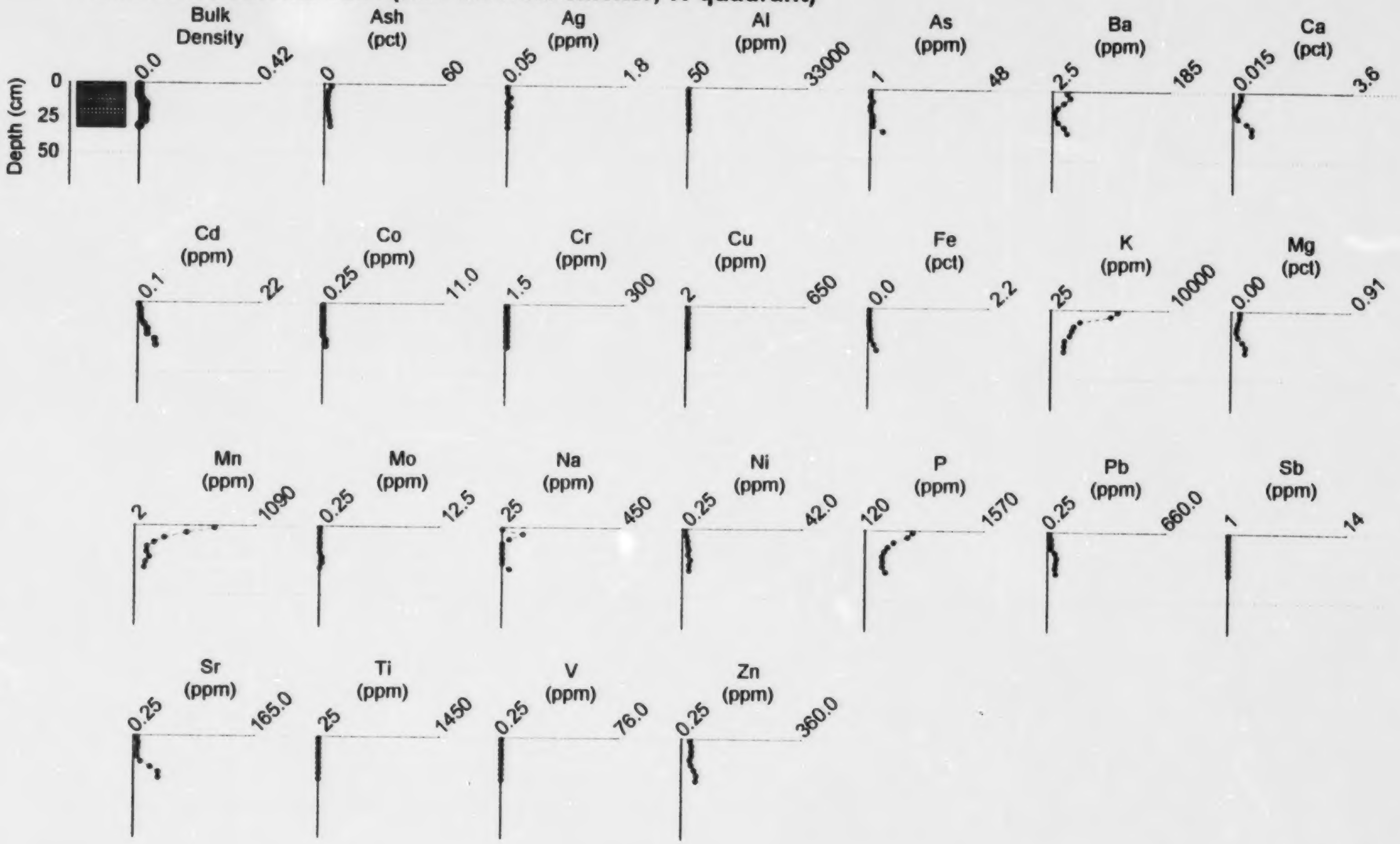
Flat Peatland Site 3500 (17.2 km from smelter, SE quadrant)



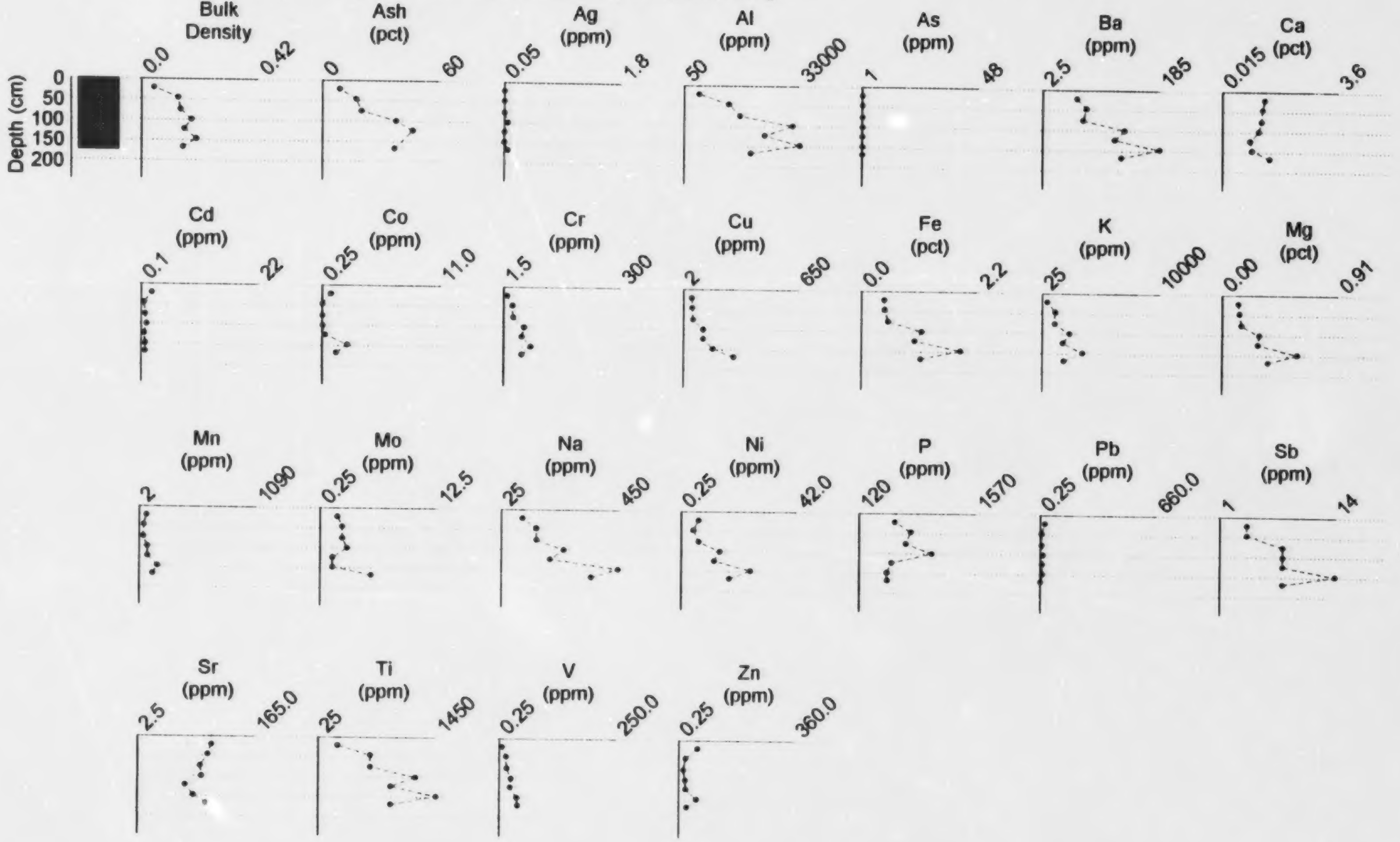
Flat Peatland Site 3500 (17.2 km from smelter, SE quadrant)



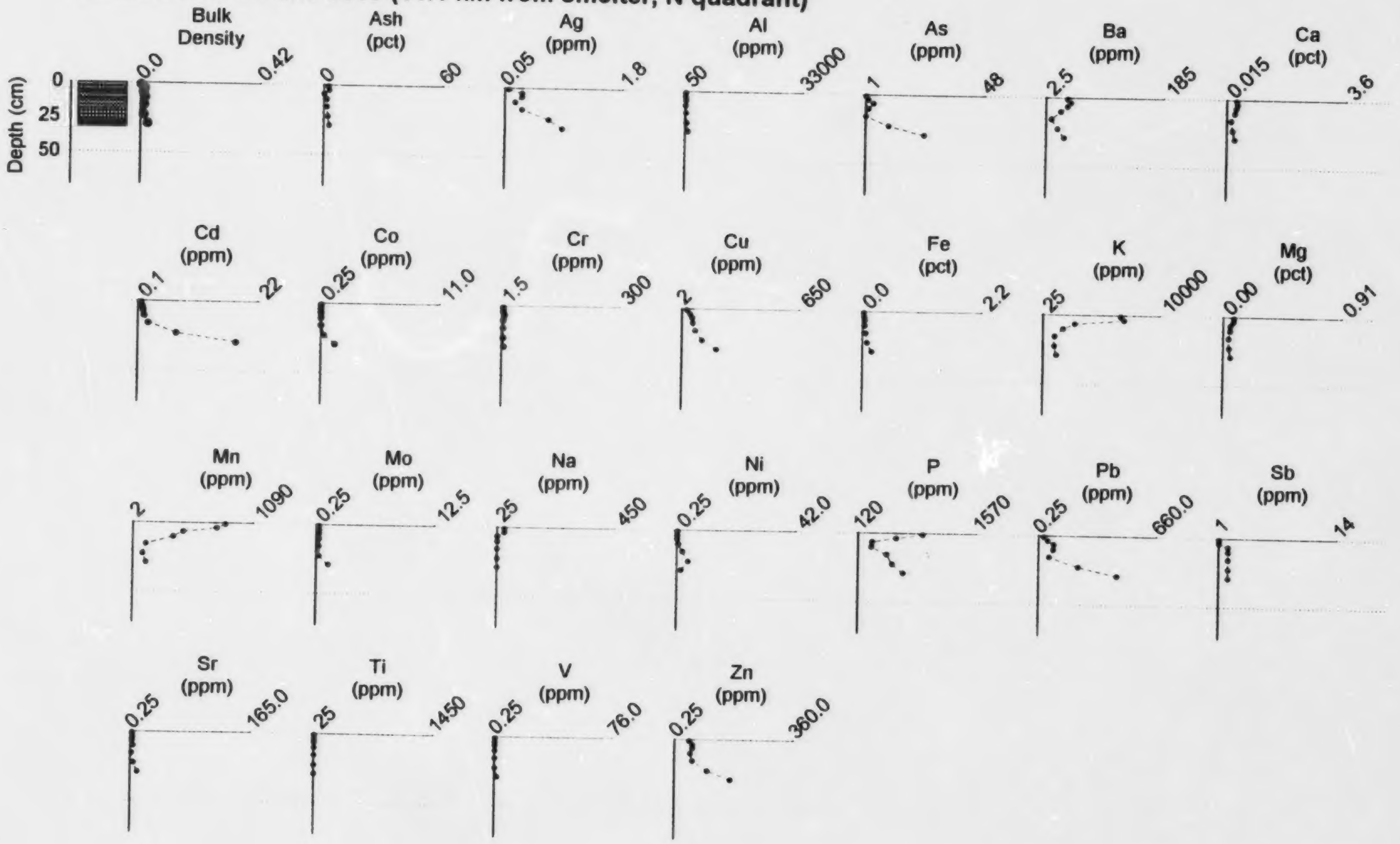
Hummock Peat Site 3503 (20.7 km from smelter, W quadrant)



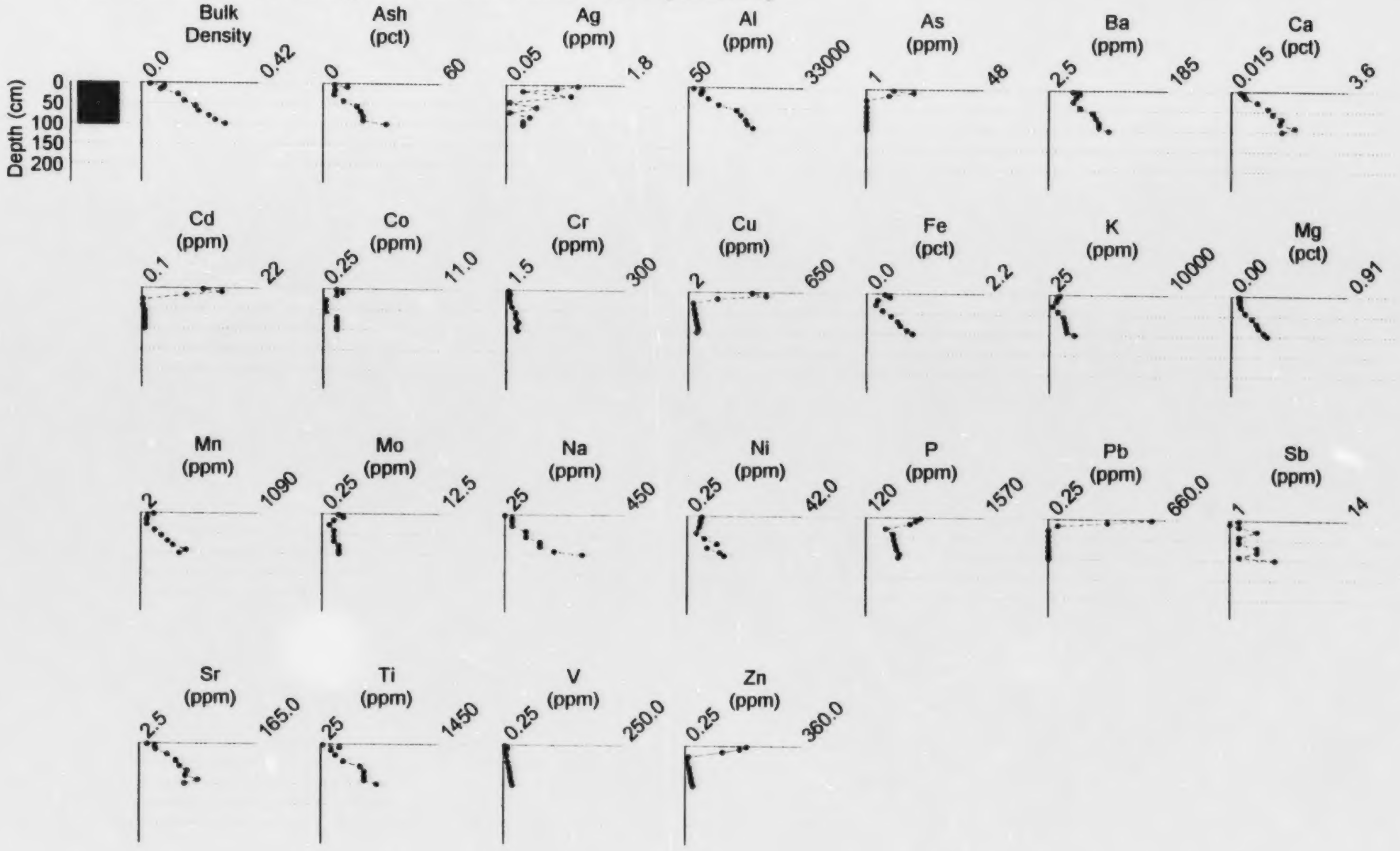
Flat Peatland Site 3503 (20.7 km from smelter, W quadrant)



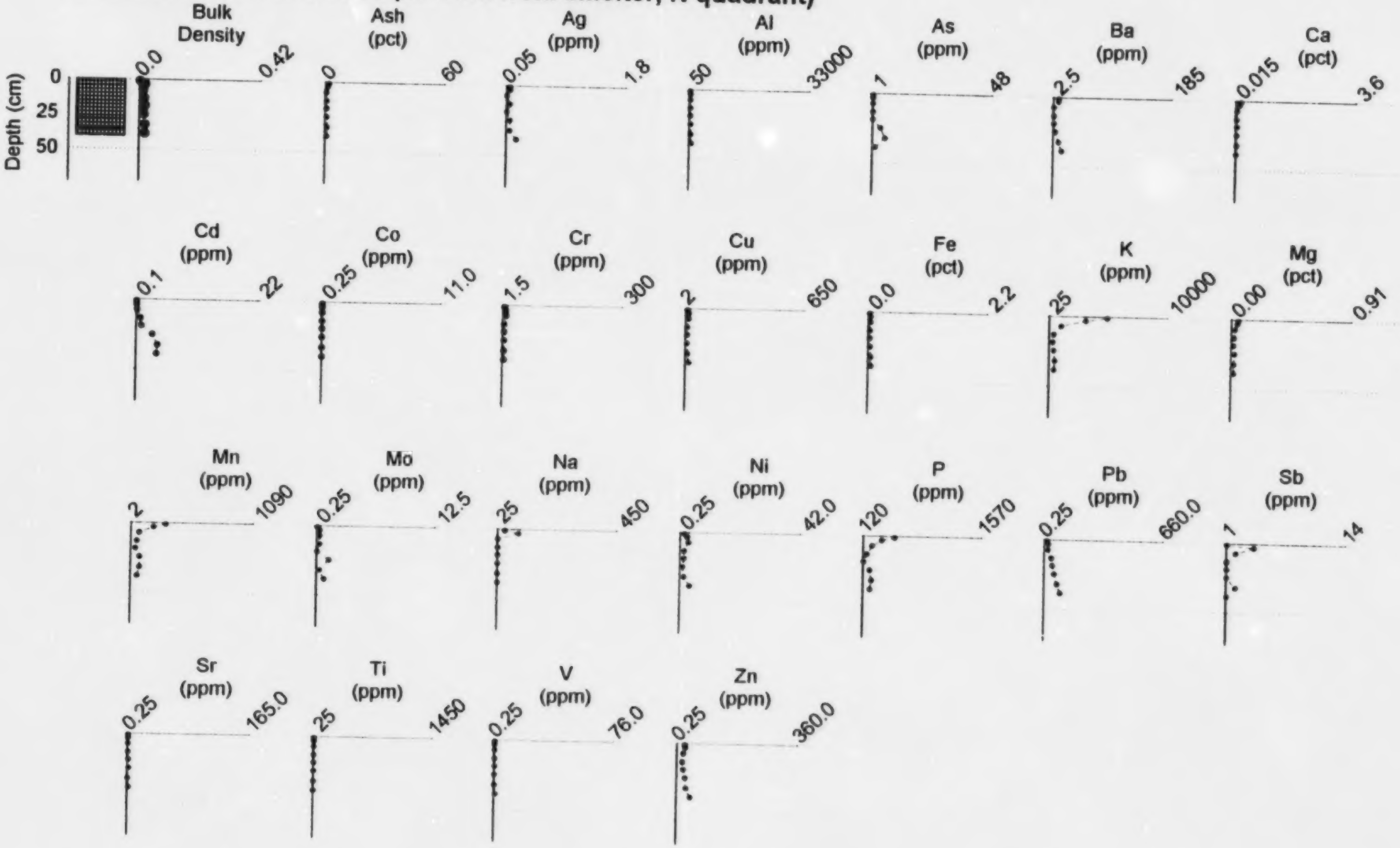
Hummock Peat Site 3510 (11.1 km from smelter, N quadrant)



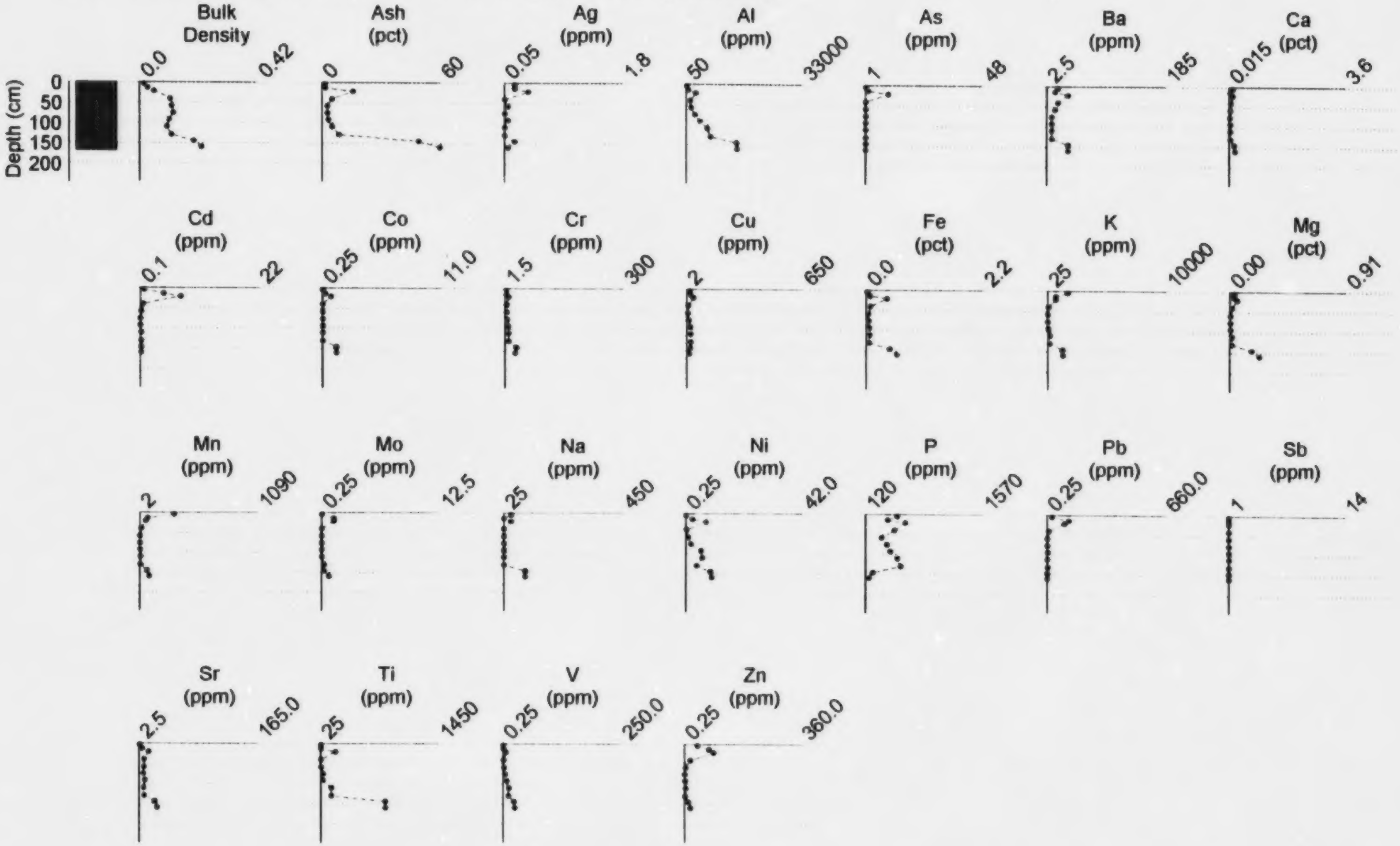
Flat Peatland Site 3510 (11.1 km from smelter, N quadrant)



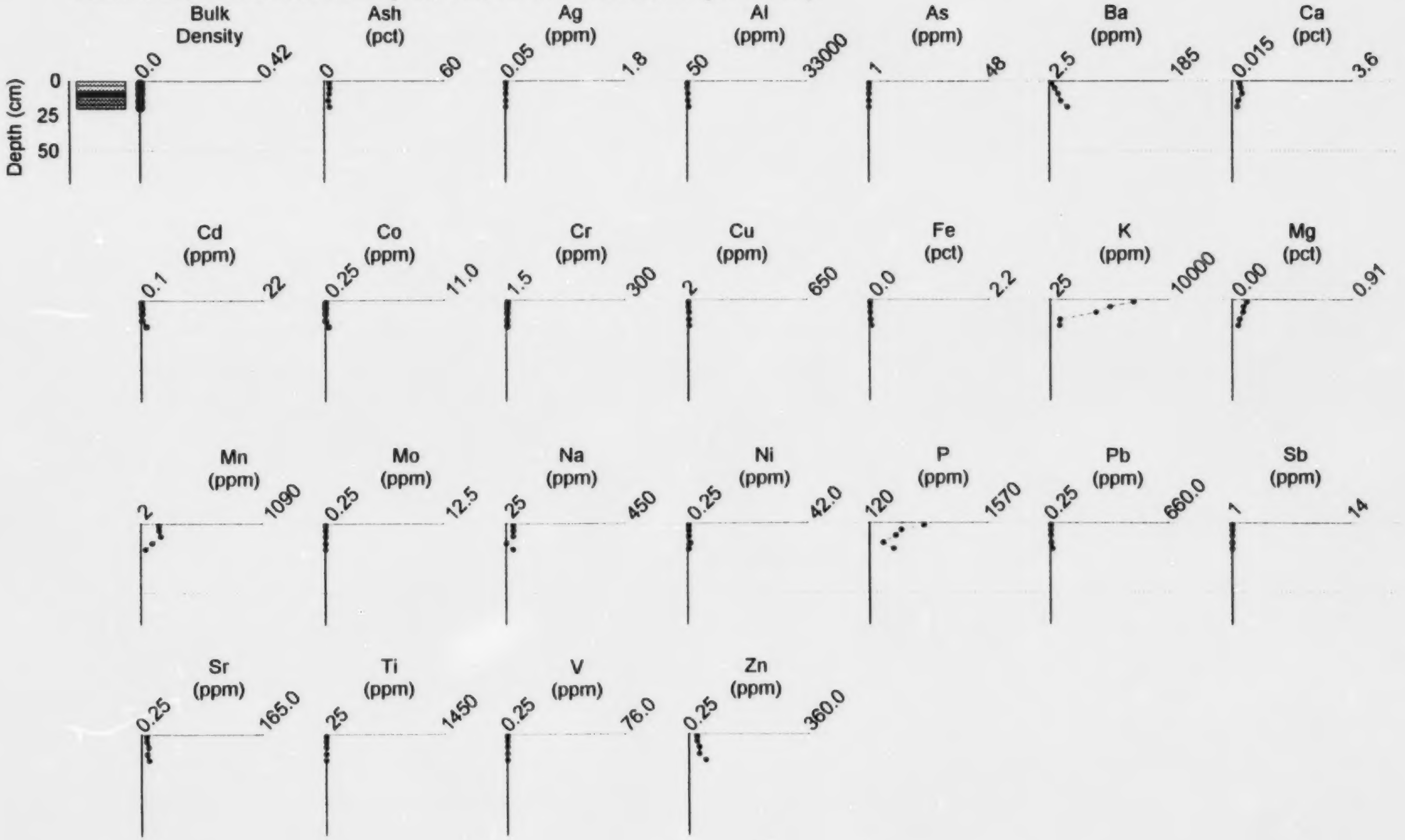
Hummock Peat Site 3511 (33.1 km from smelter, N quadrant)



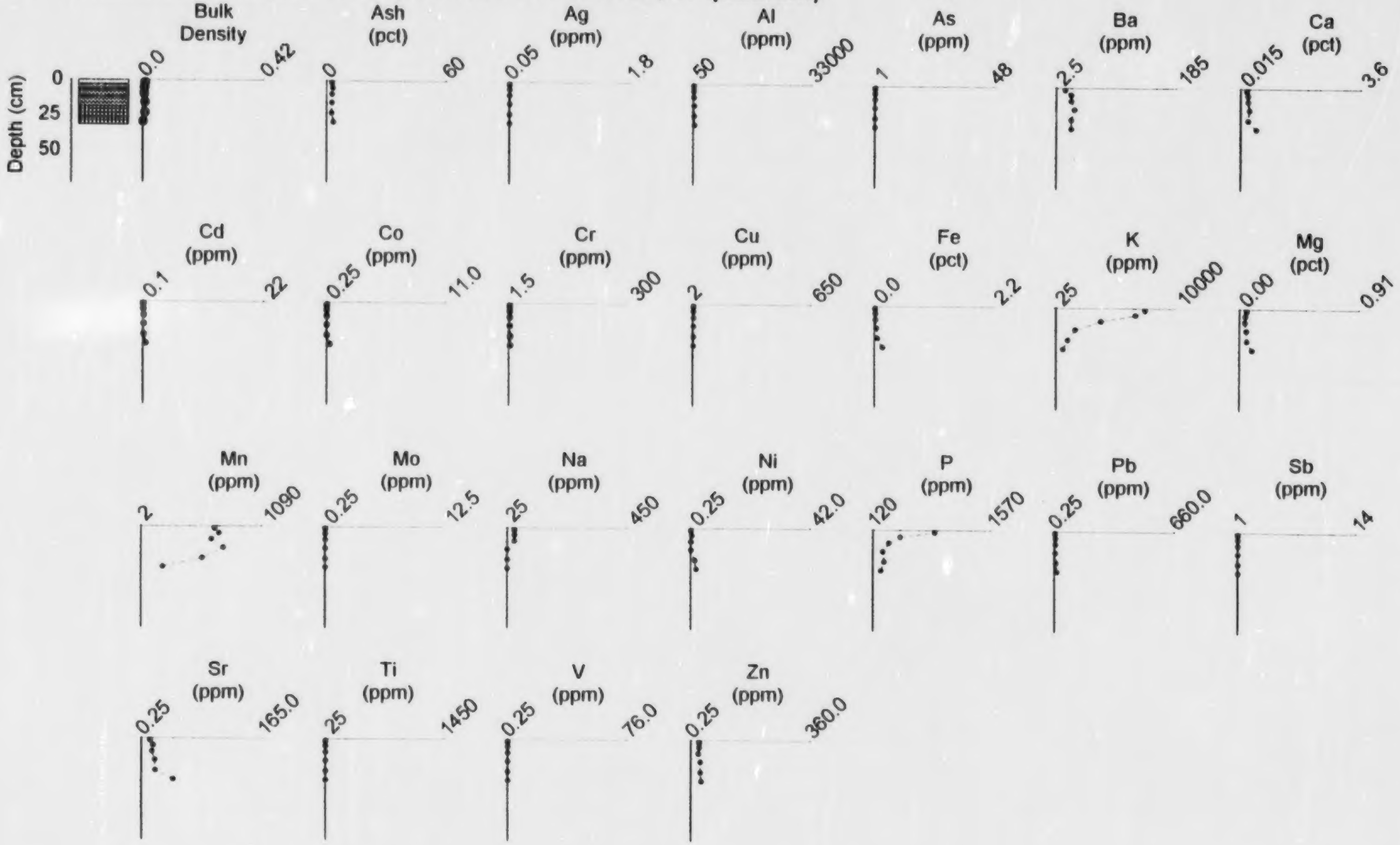
Flat Peatland Site 3511 (33.1 km from smelter, N quadrant)



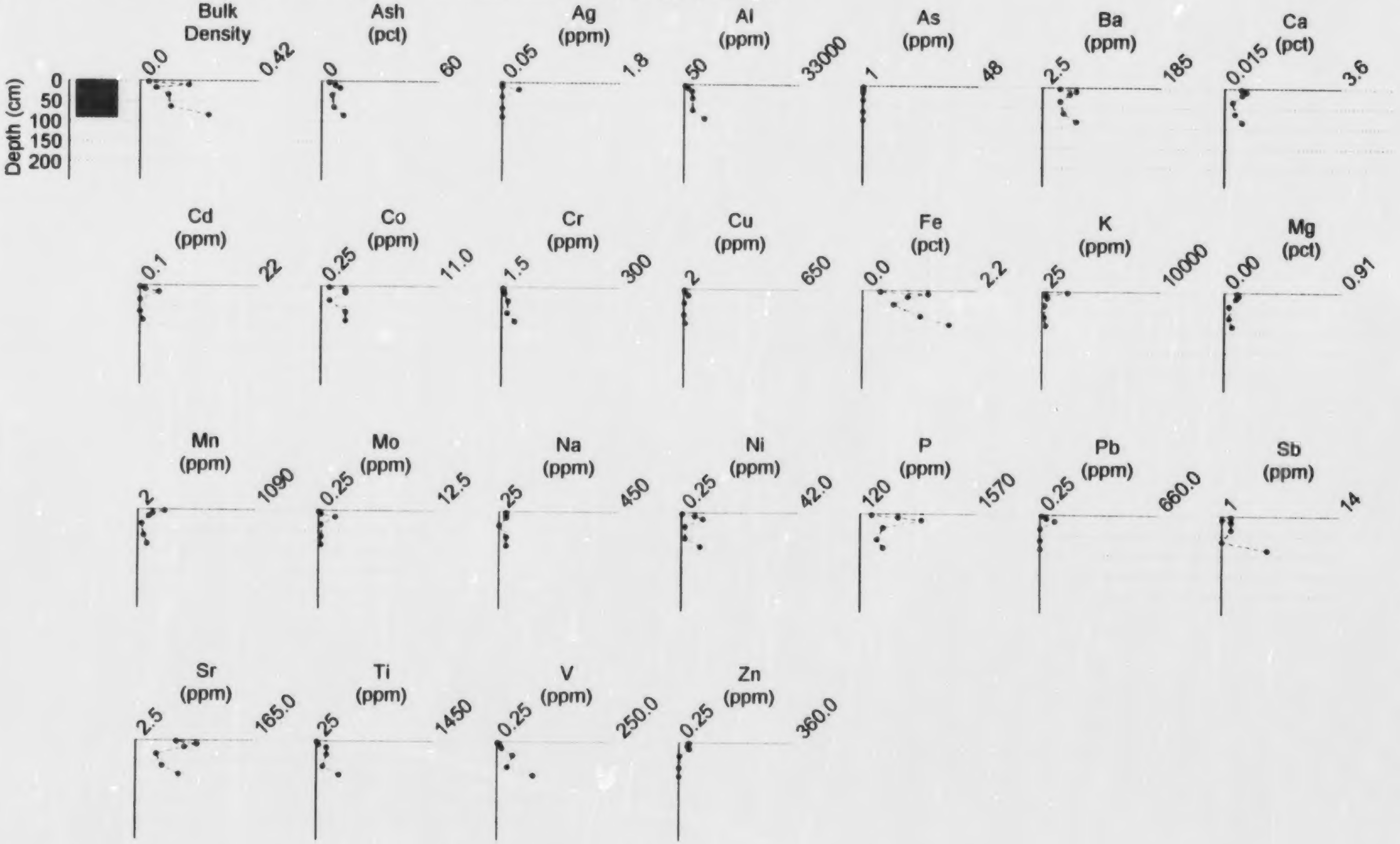
Hummock Peat Site 3512 (38.4 km from smelter, W quadrant)



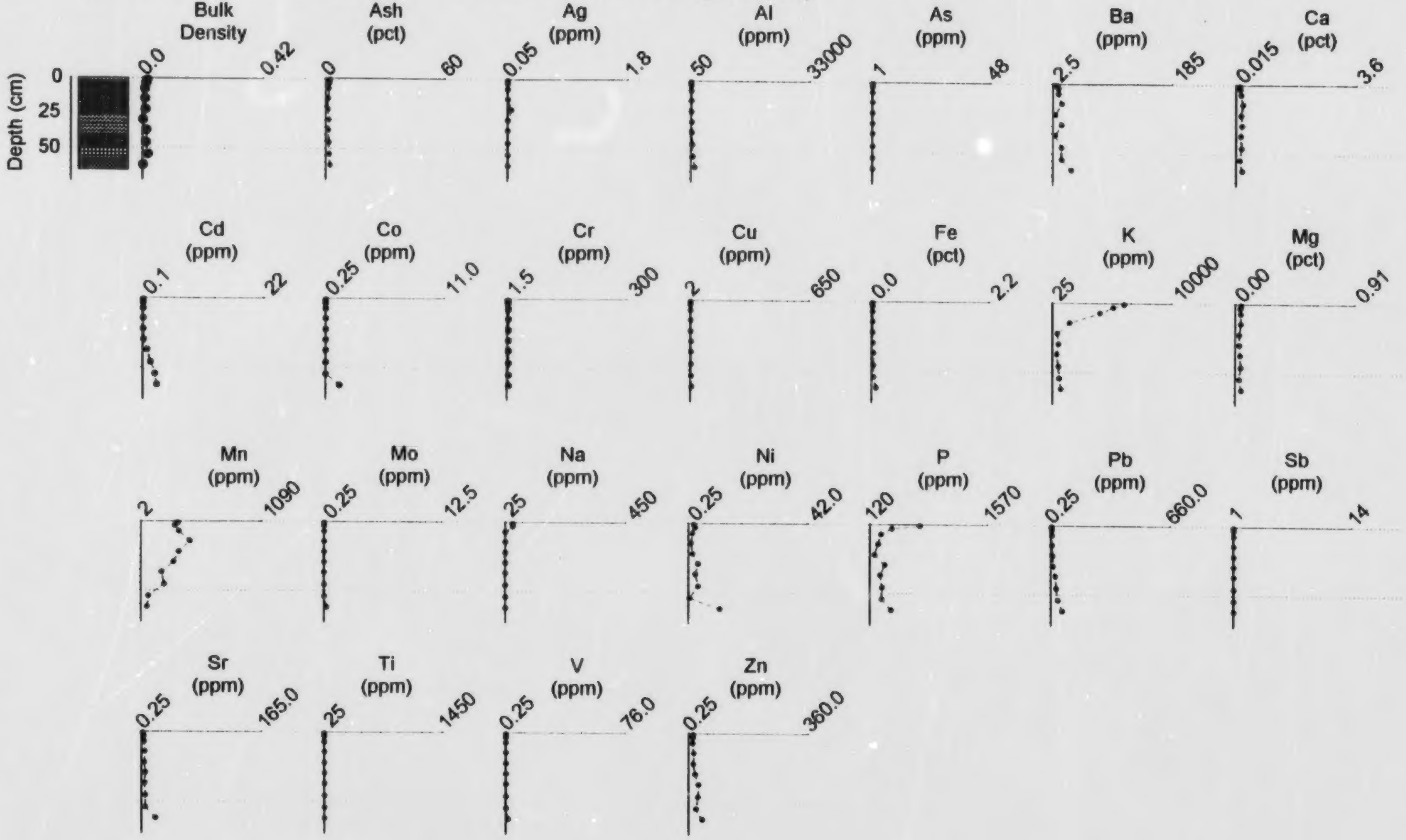
Hummock Peat Site 3514 (63.1 km from smelter, W quadrant)



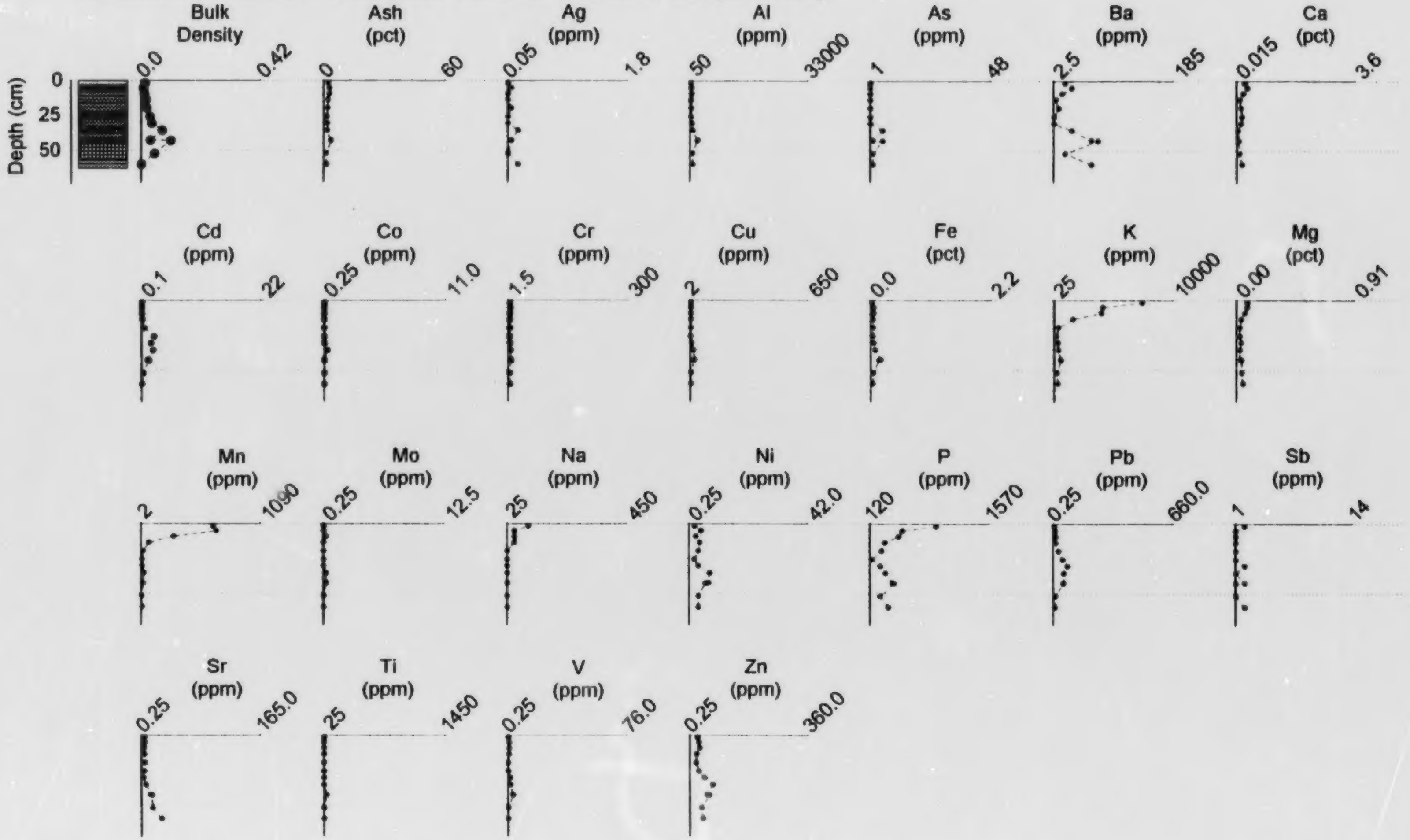
Flat Peatland Site 3514 (63.1 km from smelter, W quadrant)



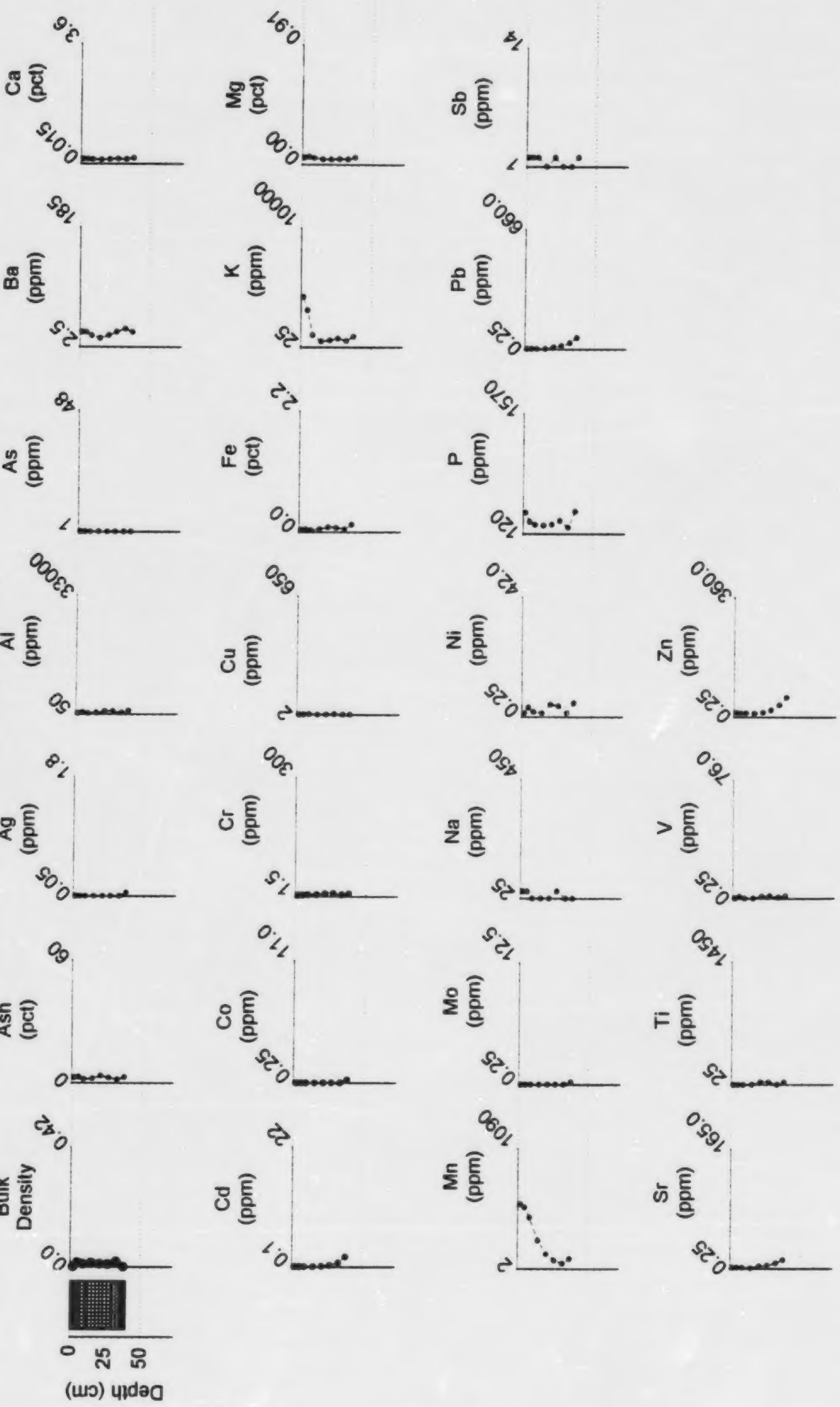
Hummock Peat Site 3519 (61.9 km from smelter, E quadrant)



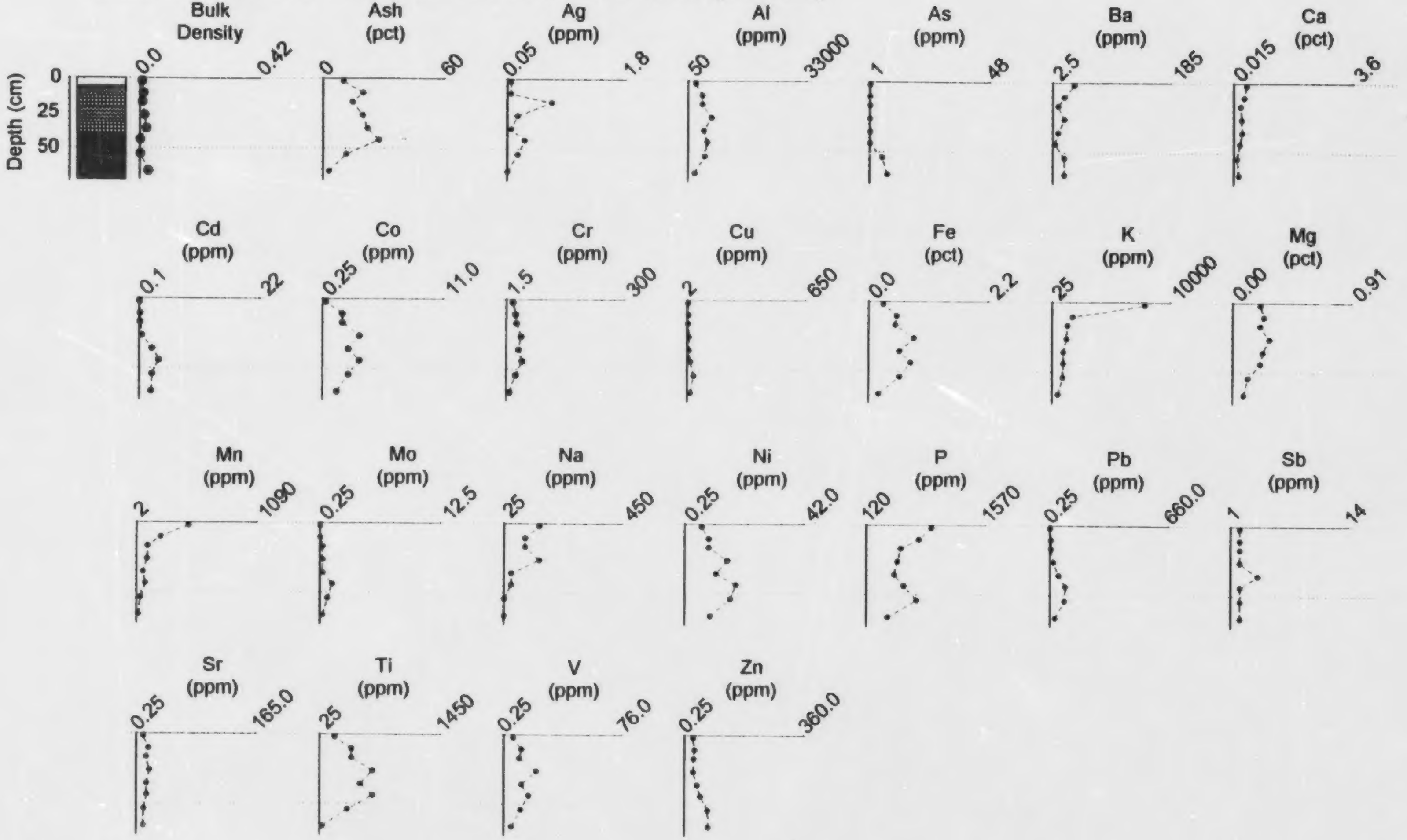
Hummock Peat Site 3520 (62.6 km from smelter, SE quadrant)



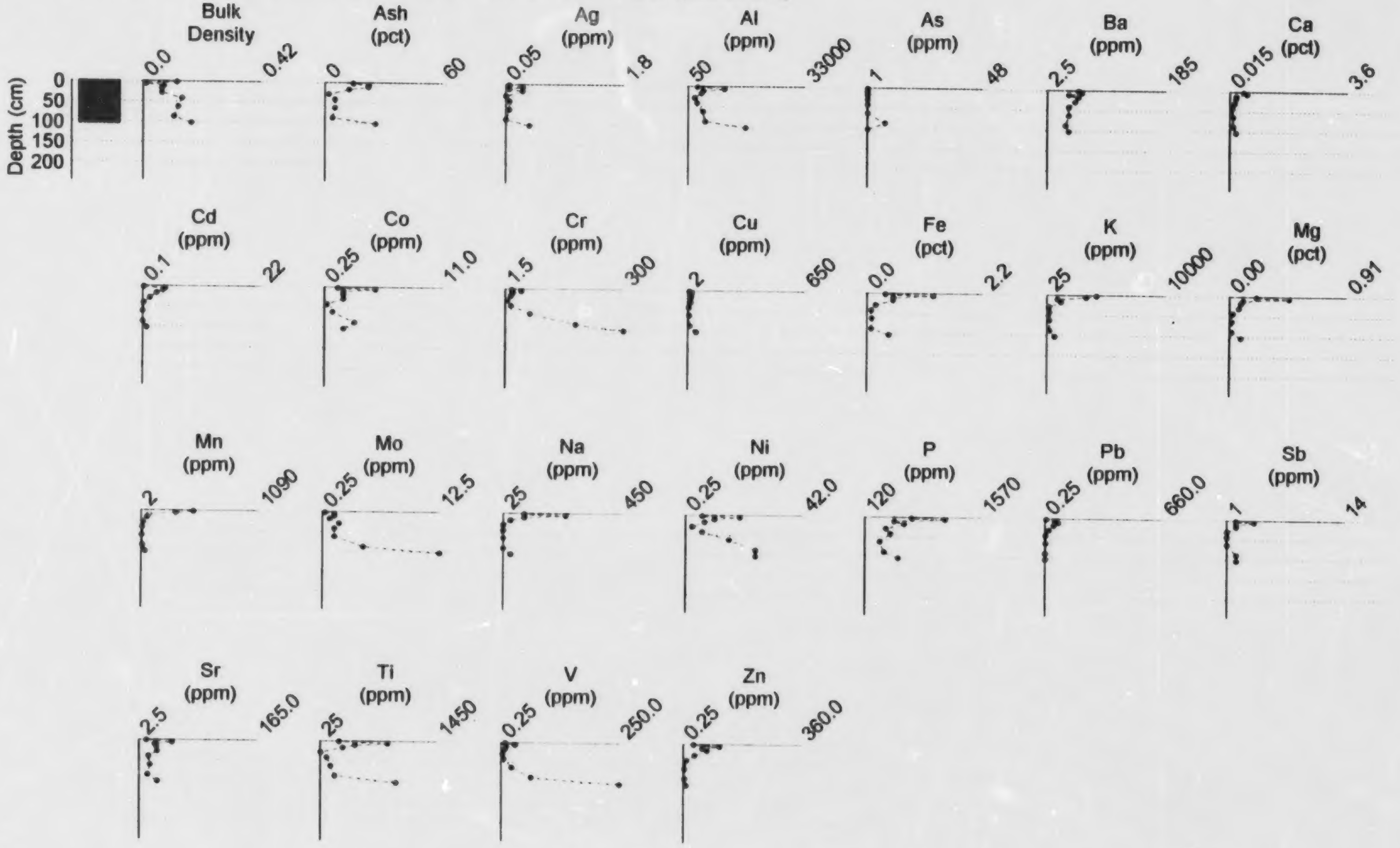
Hummock Peat Site 3521 (78.8 km from smelter, SE quadrant)



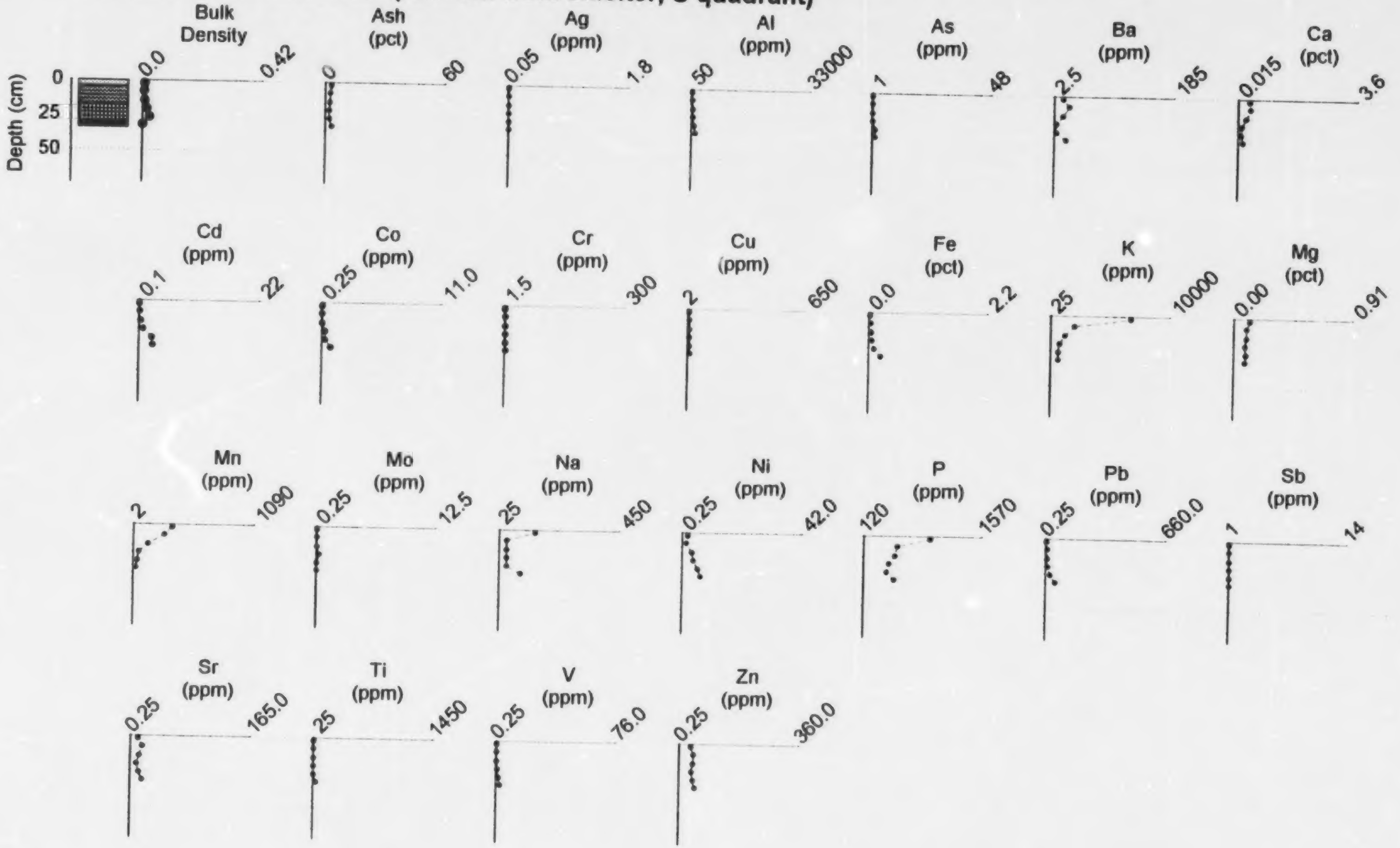
Hummock Peat Site 3522 (73.2 km from smelter, SE quadrant)



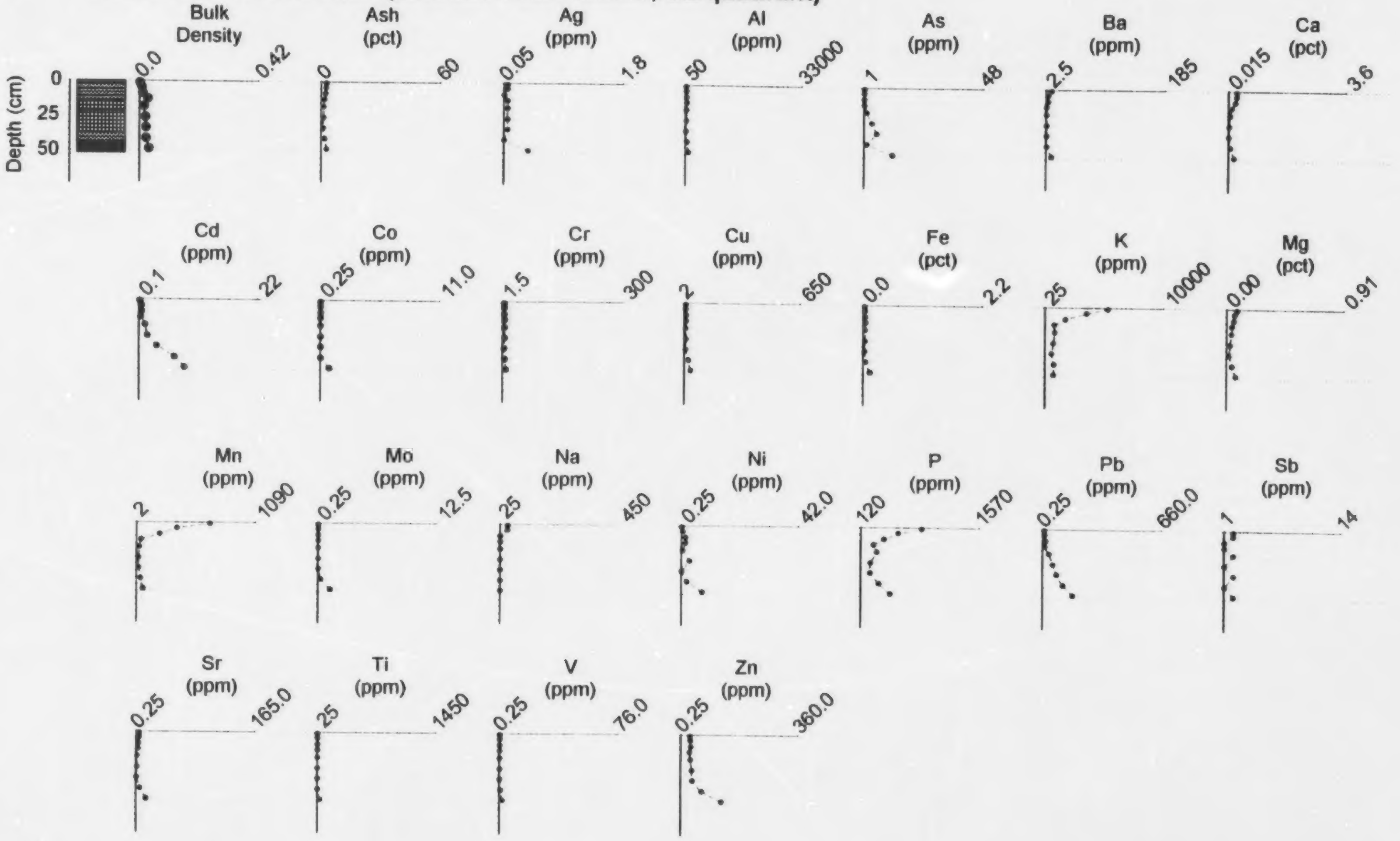
Flat Peatland Site 3522 (73.2 km from smelter, SE quadrant)



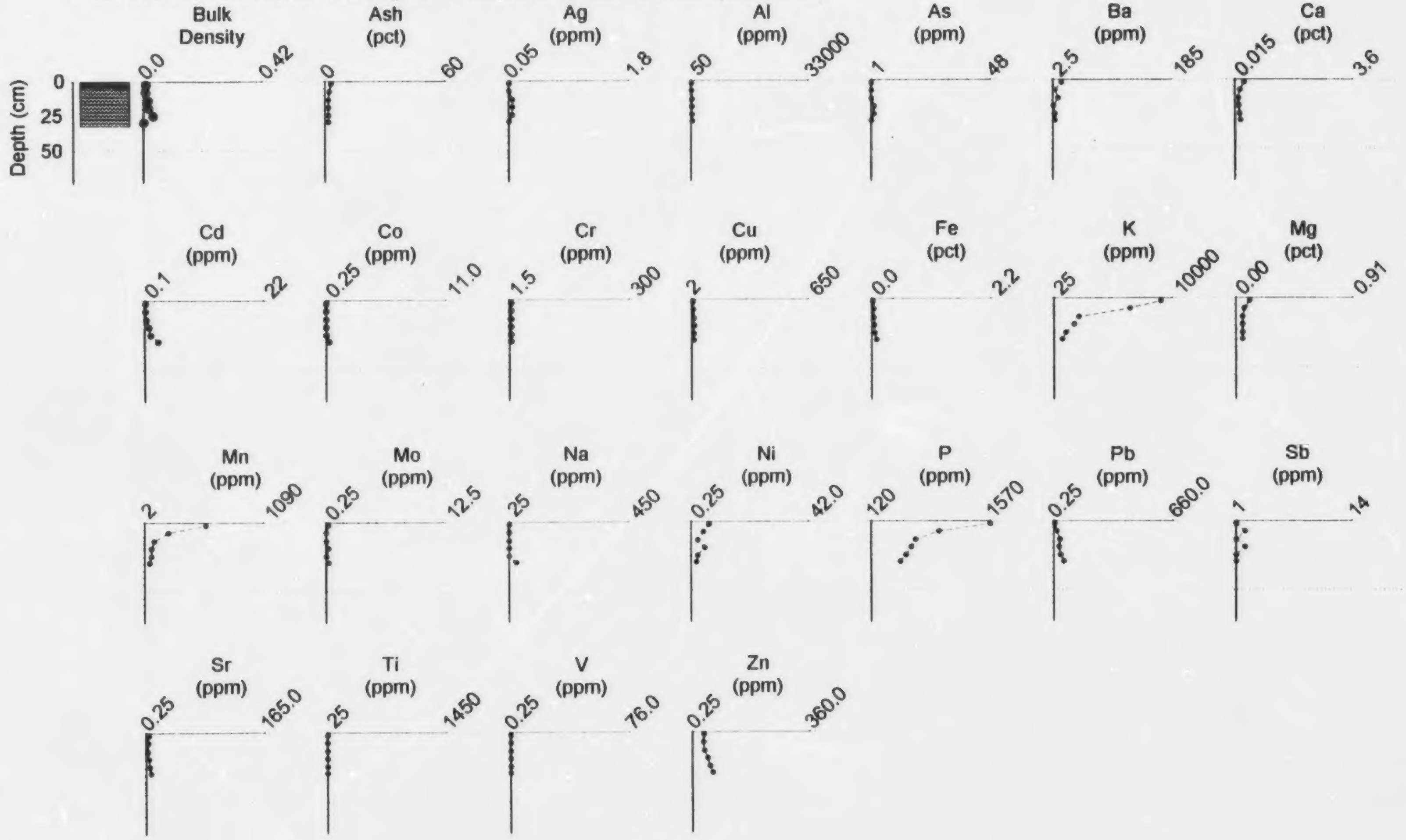
Hummock Peat Site 3523 (58.1 km from smelter, S quadrant)



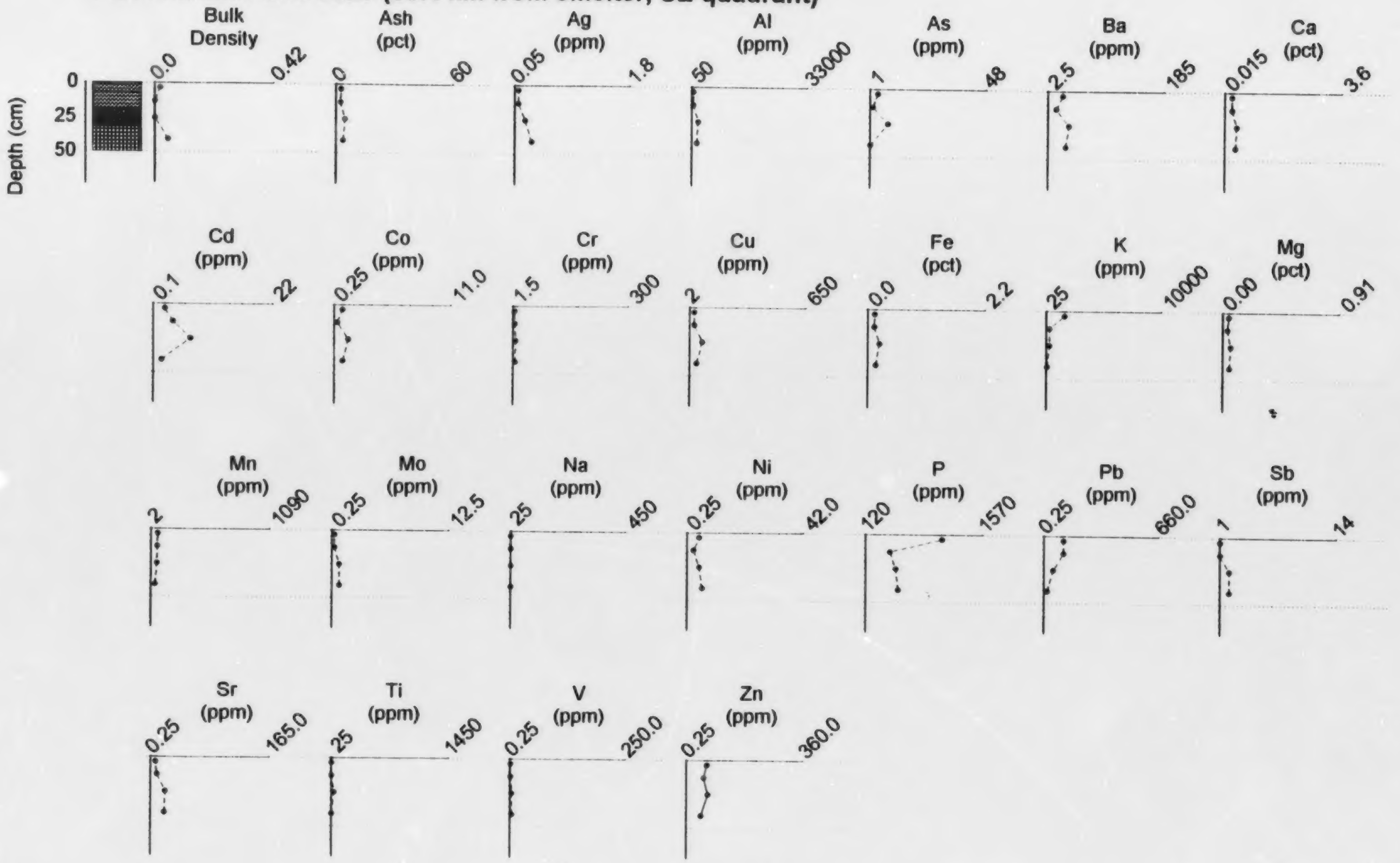
Hummock Peat Site 3525 (29.5 km from smelter, SE quadrant)



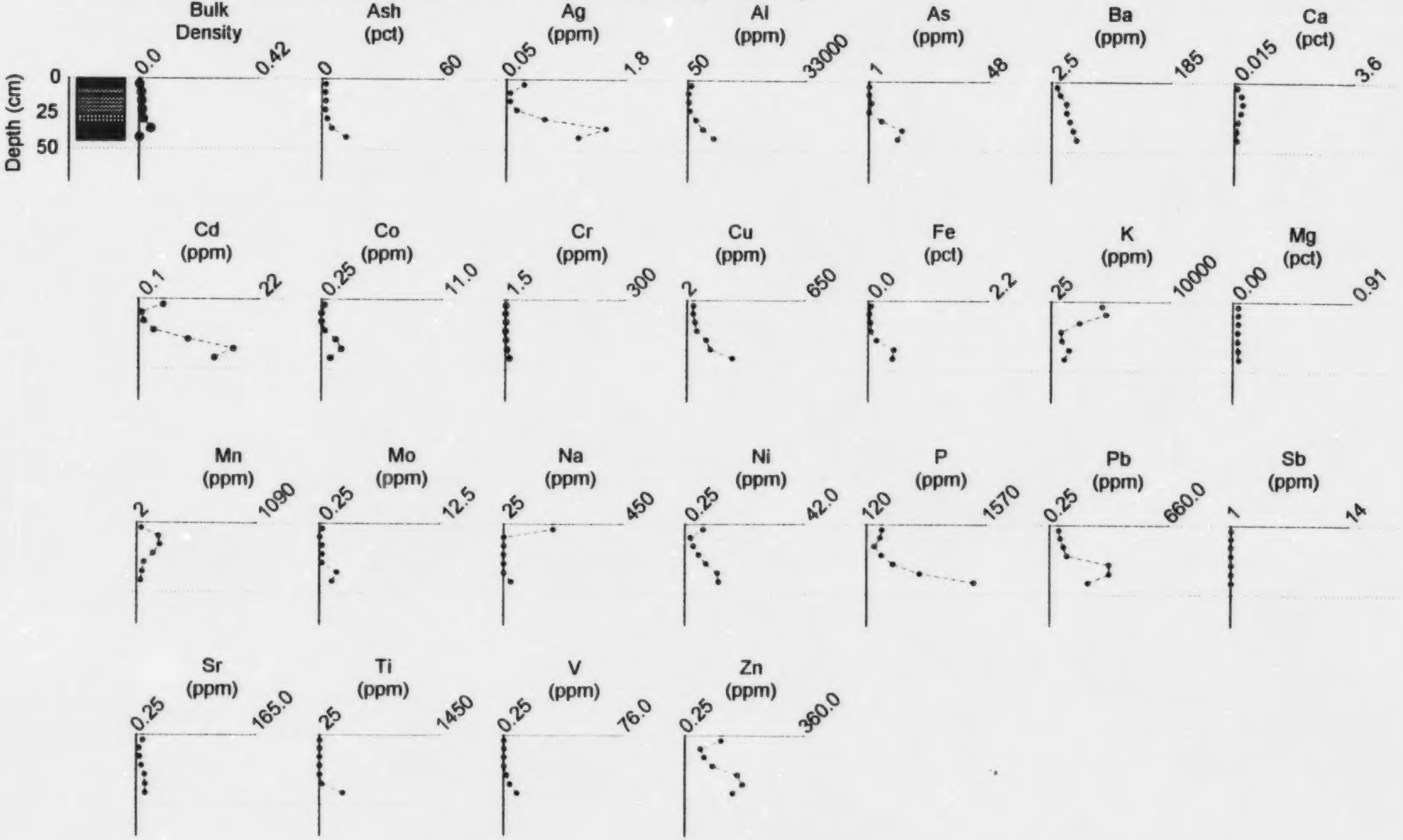
Hummock Peat Site 3526 (35.4 km from smelter, SE quadrant)



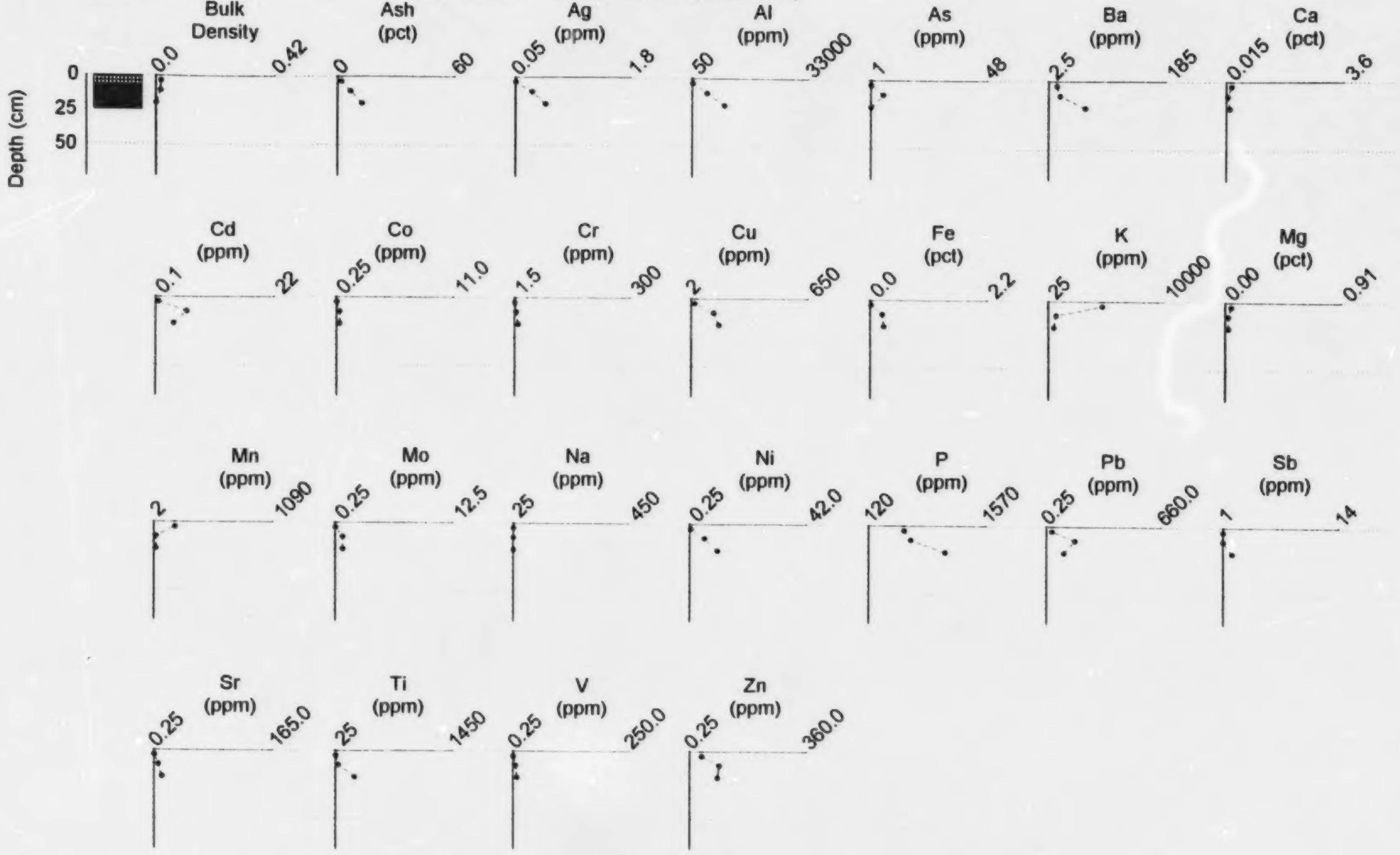
Flat Peatland Site 3526 (35.4 km from smelter, SE quadrant)



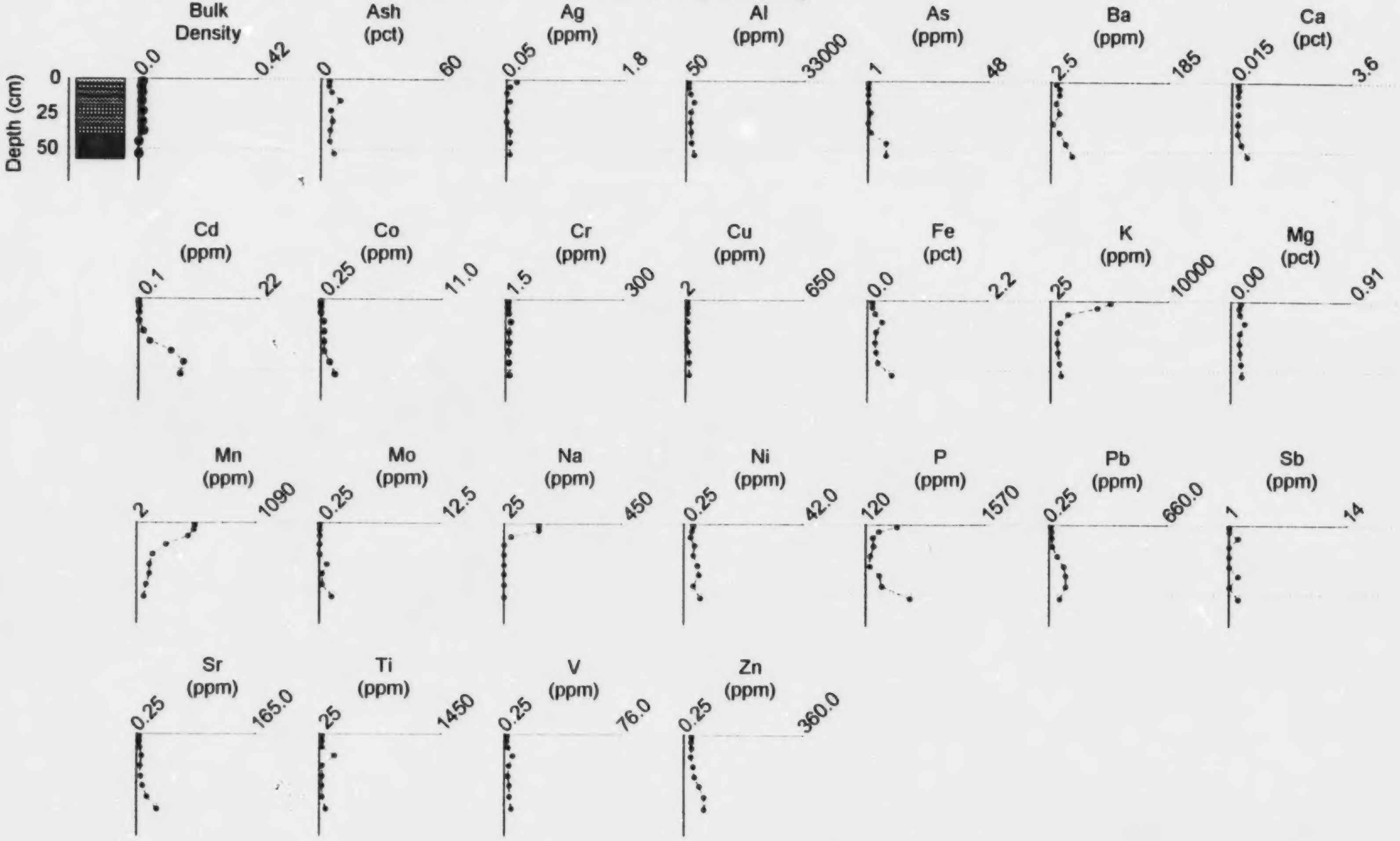
Hummock Peat Site 3527 (15.2 km from smelter, E quadrant)



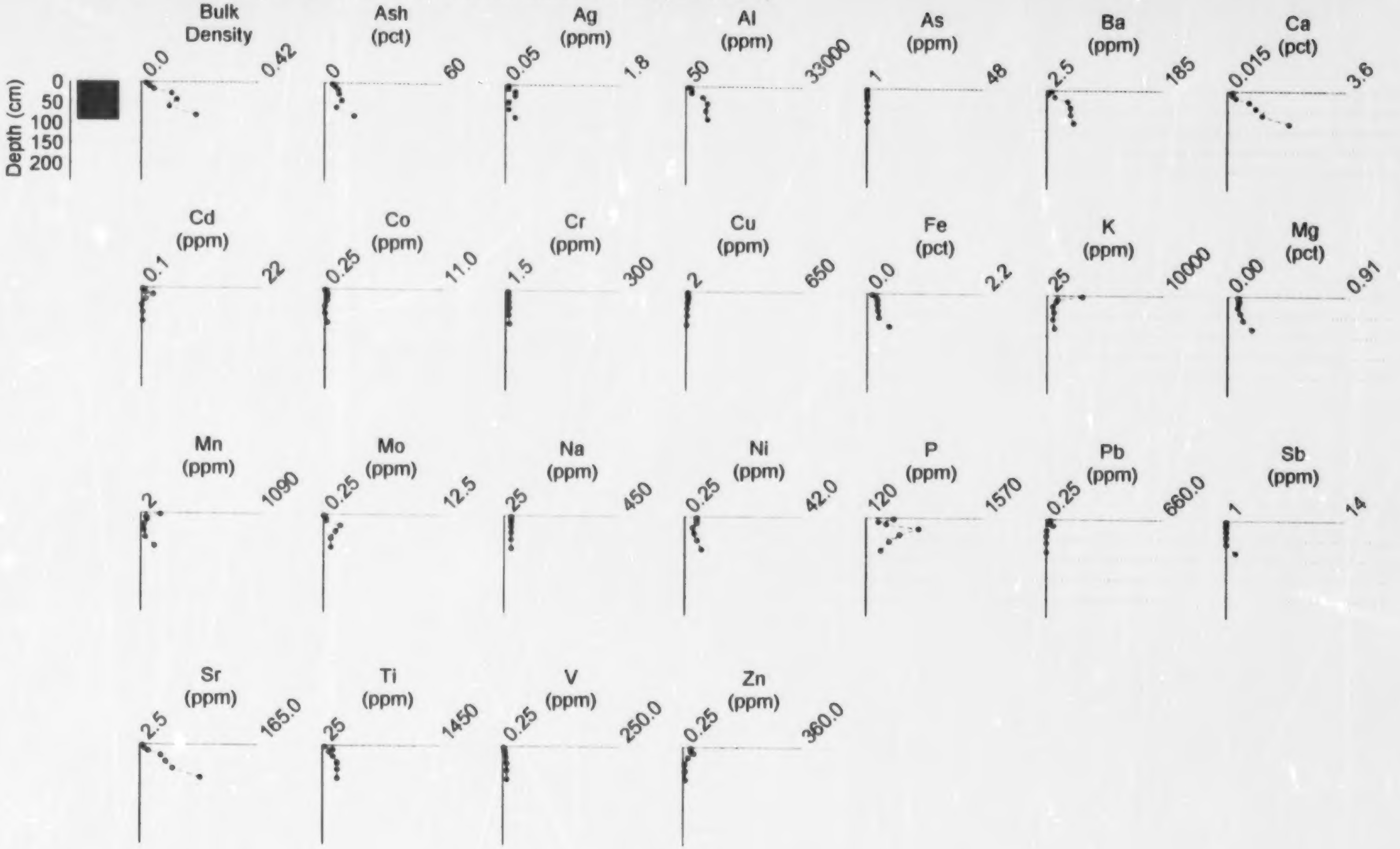
Flat Peatland Site 3527 (15.2 km from smelter, E quadrant)



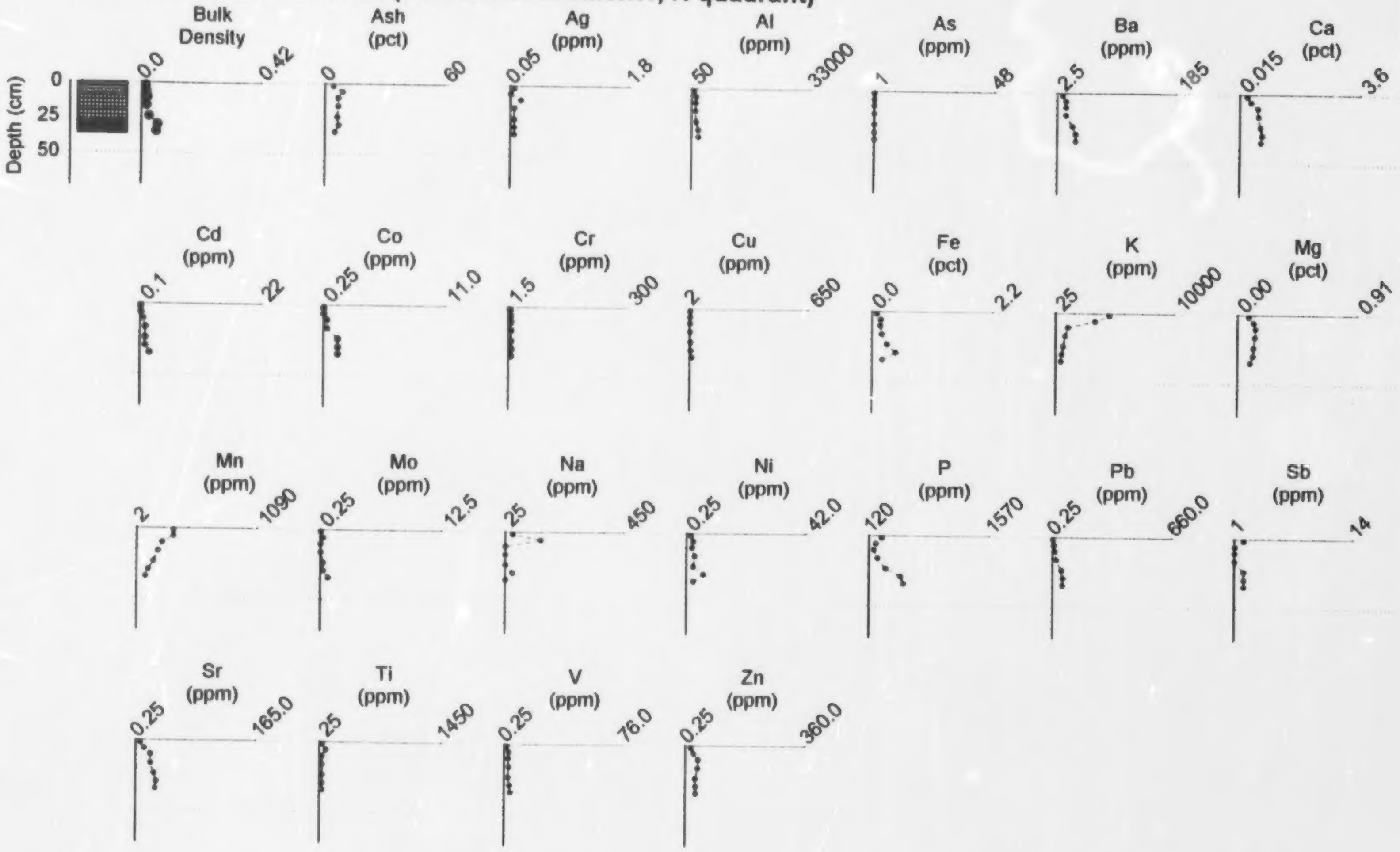
Hummock Peat Site 3528 (57.6 km from smelter, N quadrant)



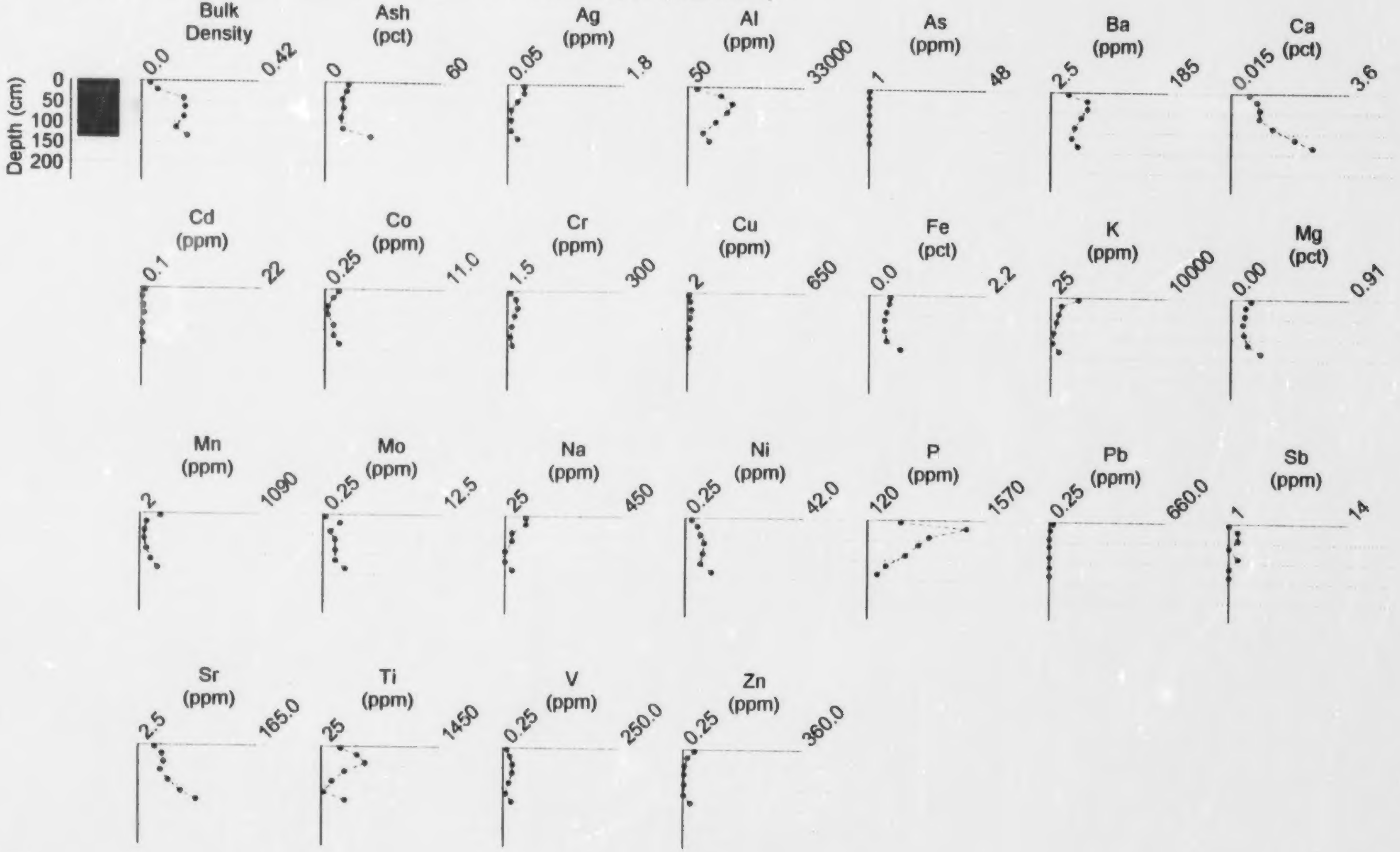
Flat Peatland Site 3528 (57.6 km from smelter, N quadrant)



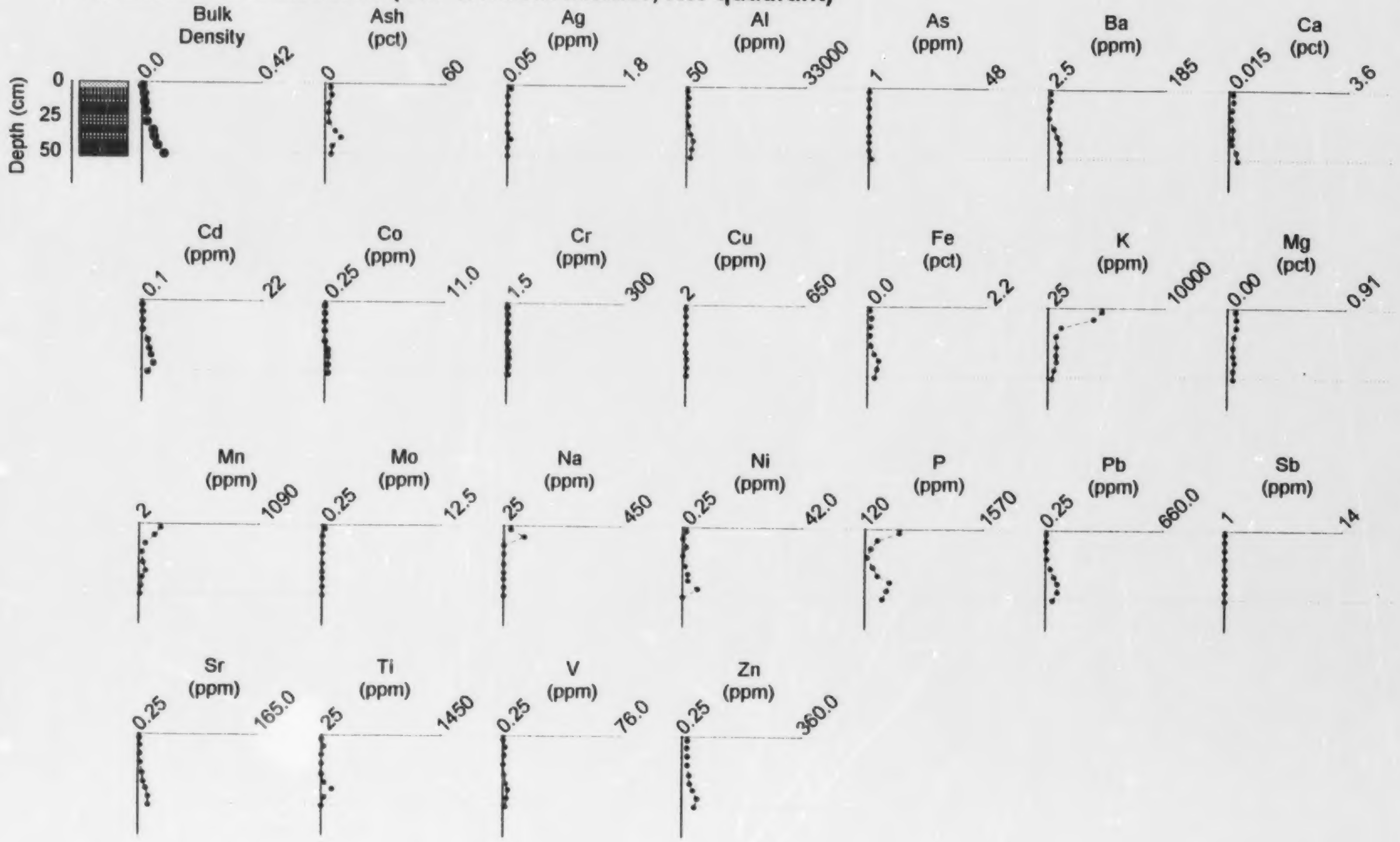
Hummock Peat Site 3529 (80.8 km from smelter, N quadrant)



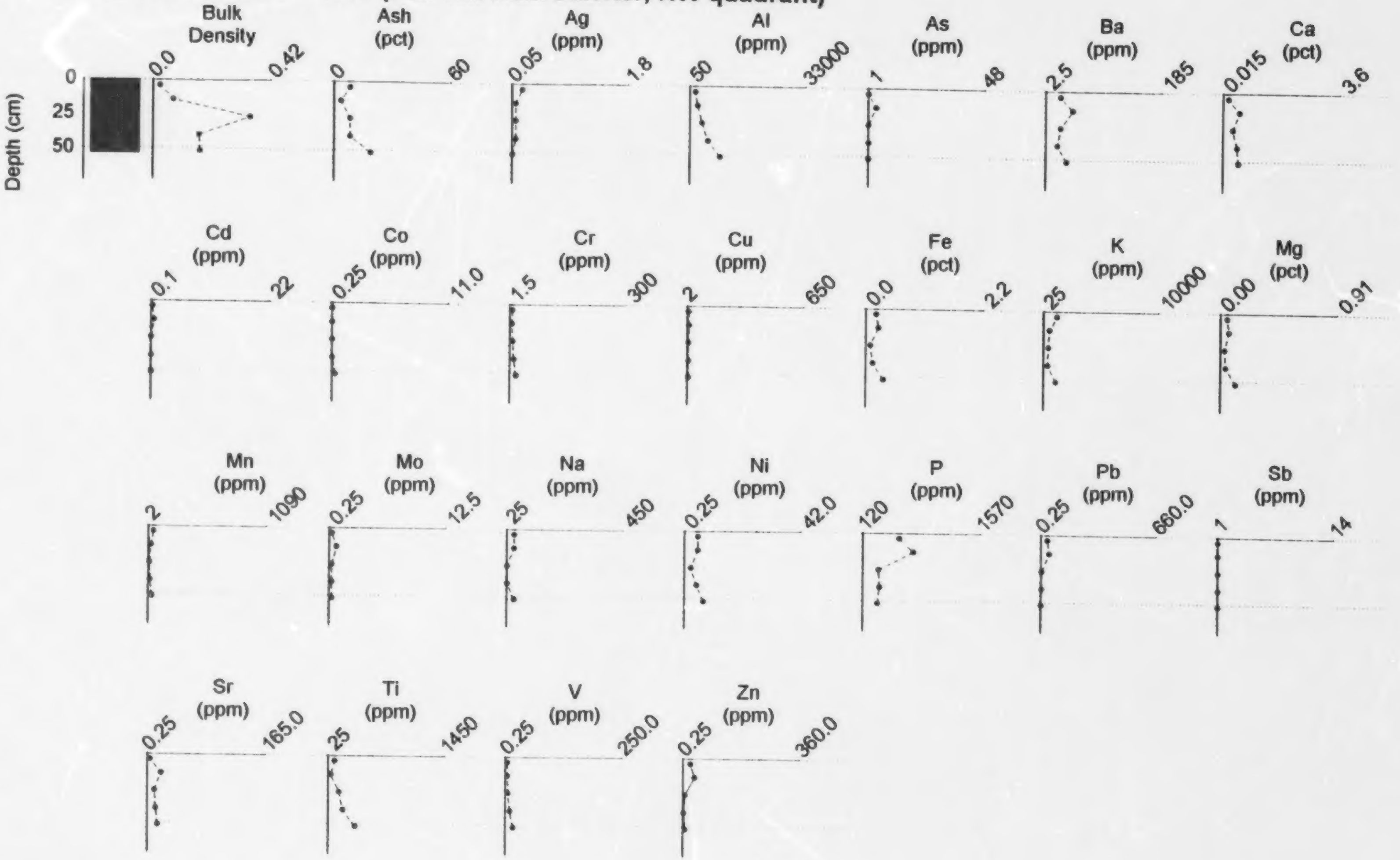
Flat Peatland Site 3529 (80.8 km from smelter, N quadrant)



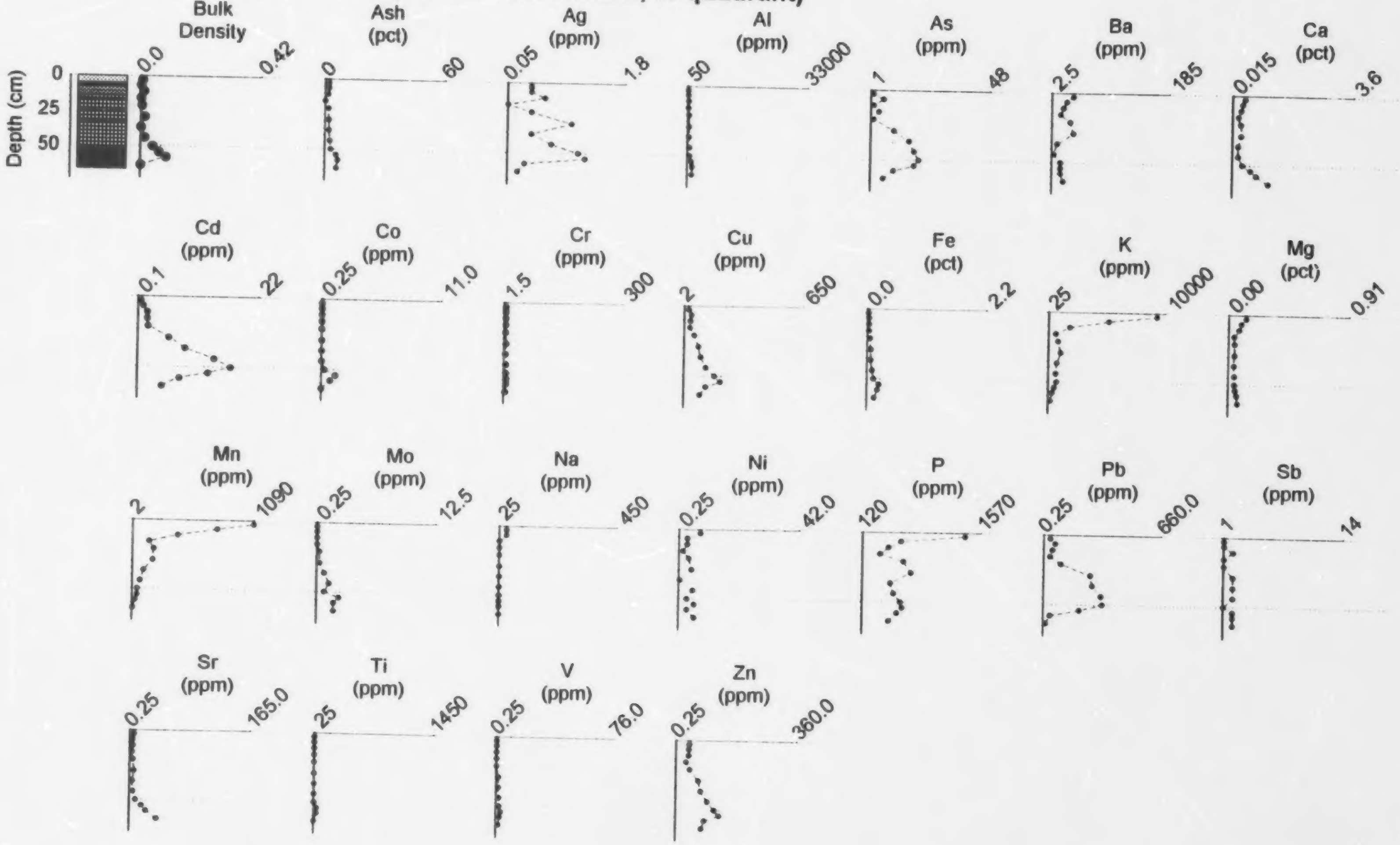
Hummock Peat Site 3530 (91.7 km from smelter, NW quadrant)



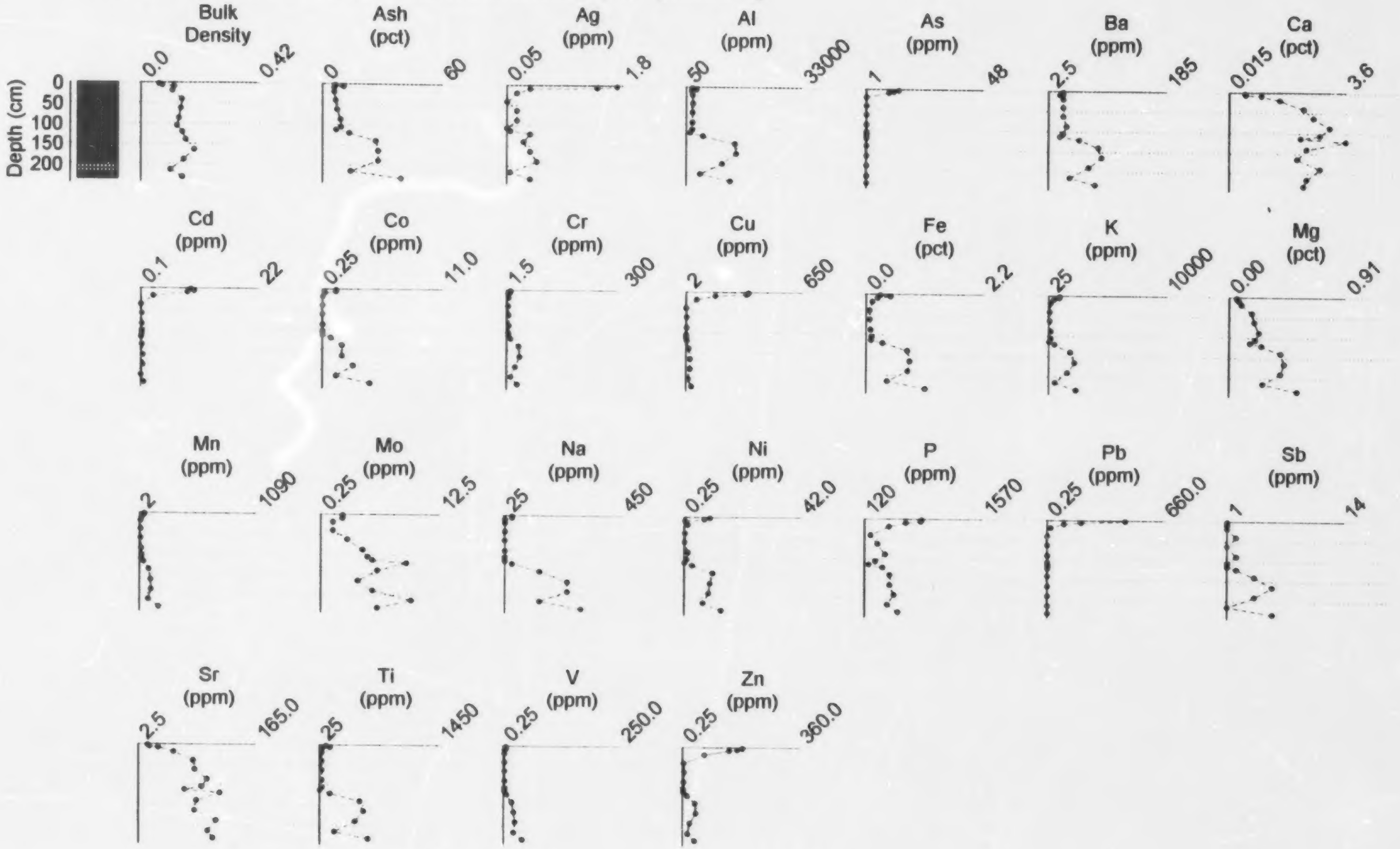
Flat Peatland Site 3530 (91.7 km from smelter, NW quadrant)

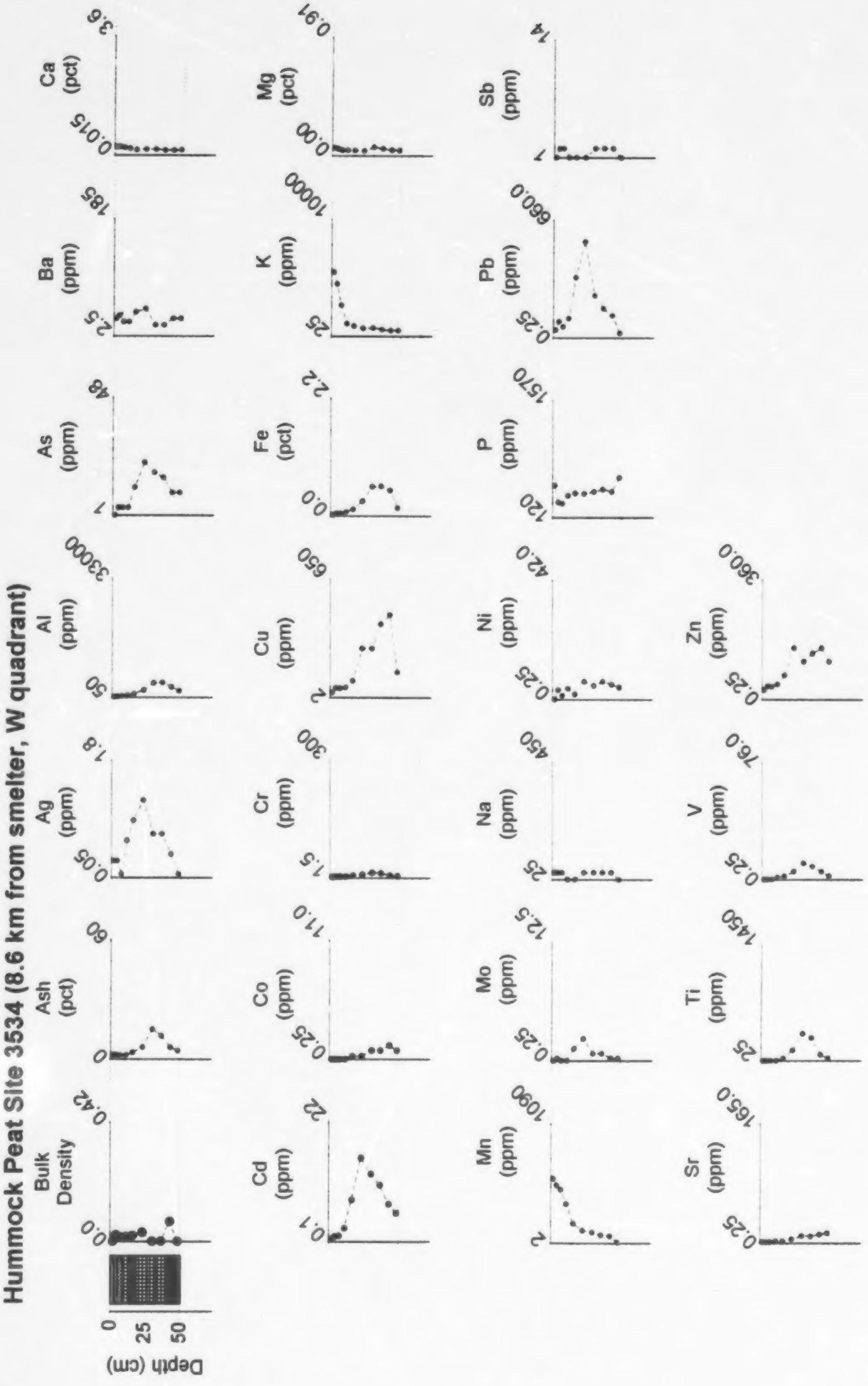


Hummock Peat Site 3533 (9.8 km from smelter, W quadrant)

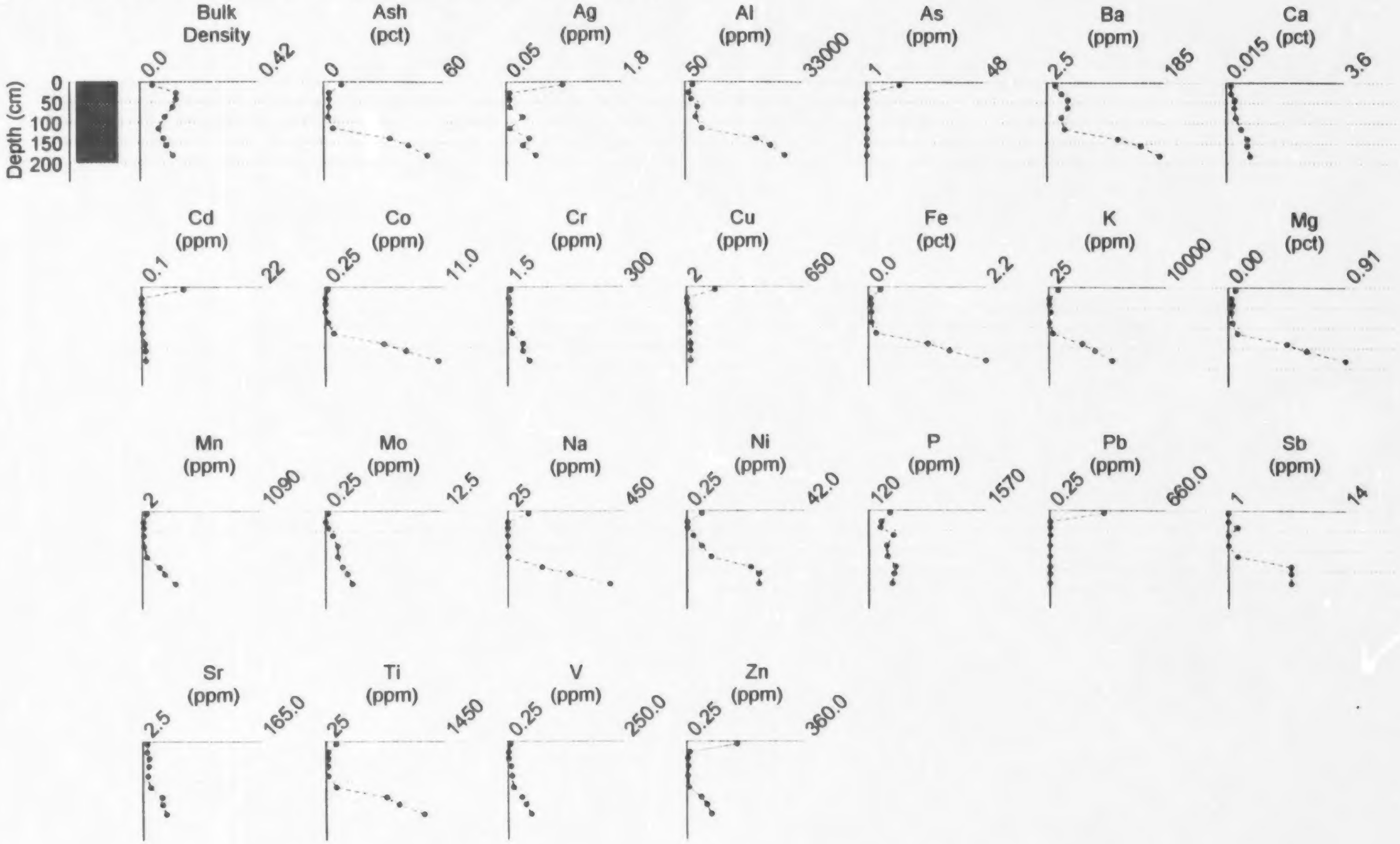


Flat Peatland Site 3533 (9.8 km from smelter, W quadrant)

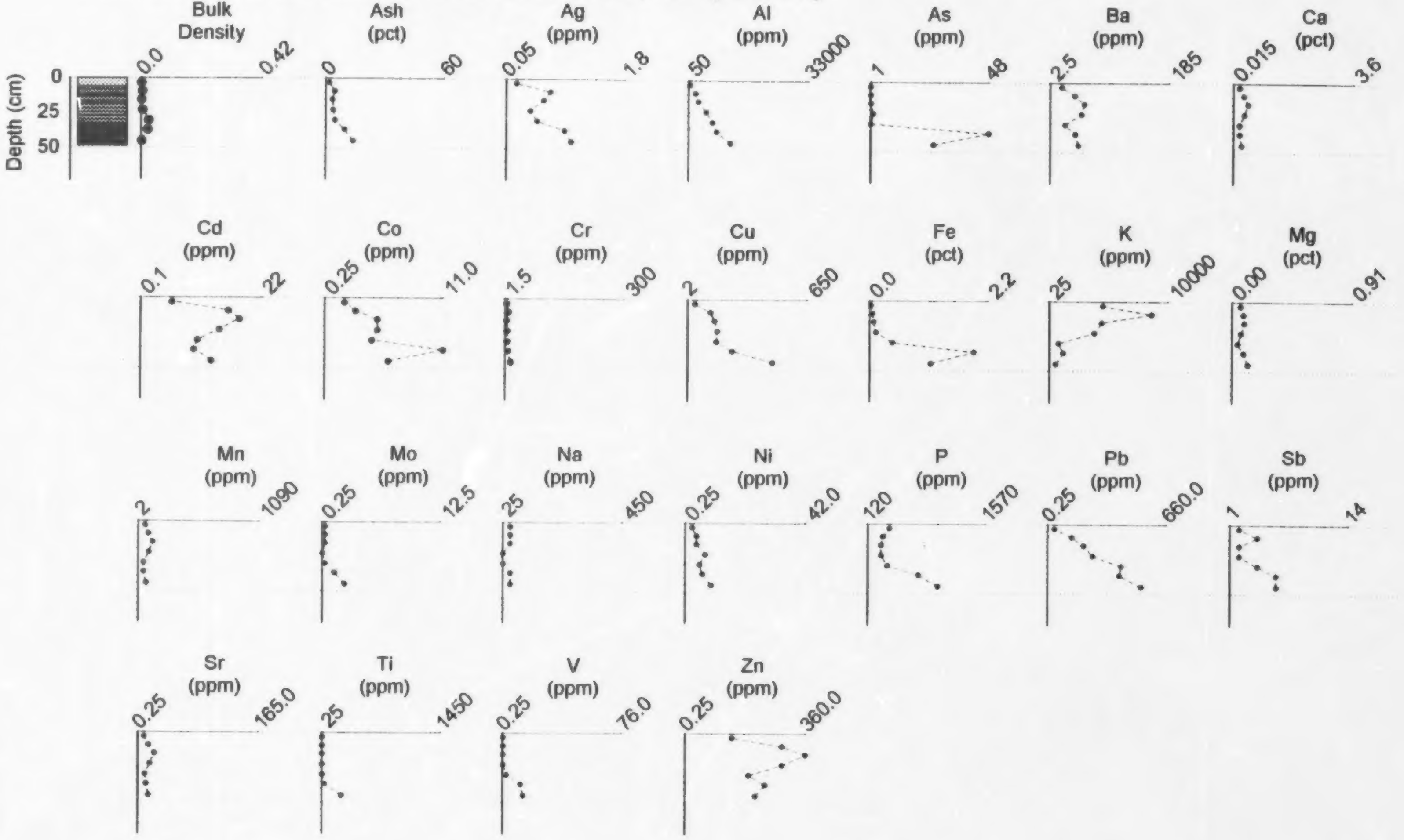



Hummock Peat Site 3534 (8.6 km from smelter, W quadrant)

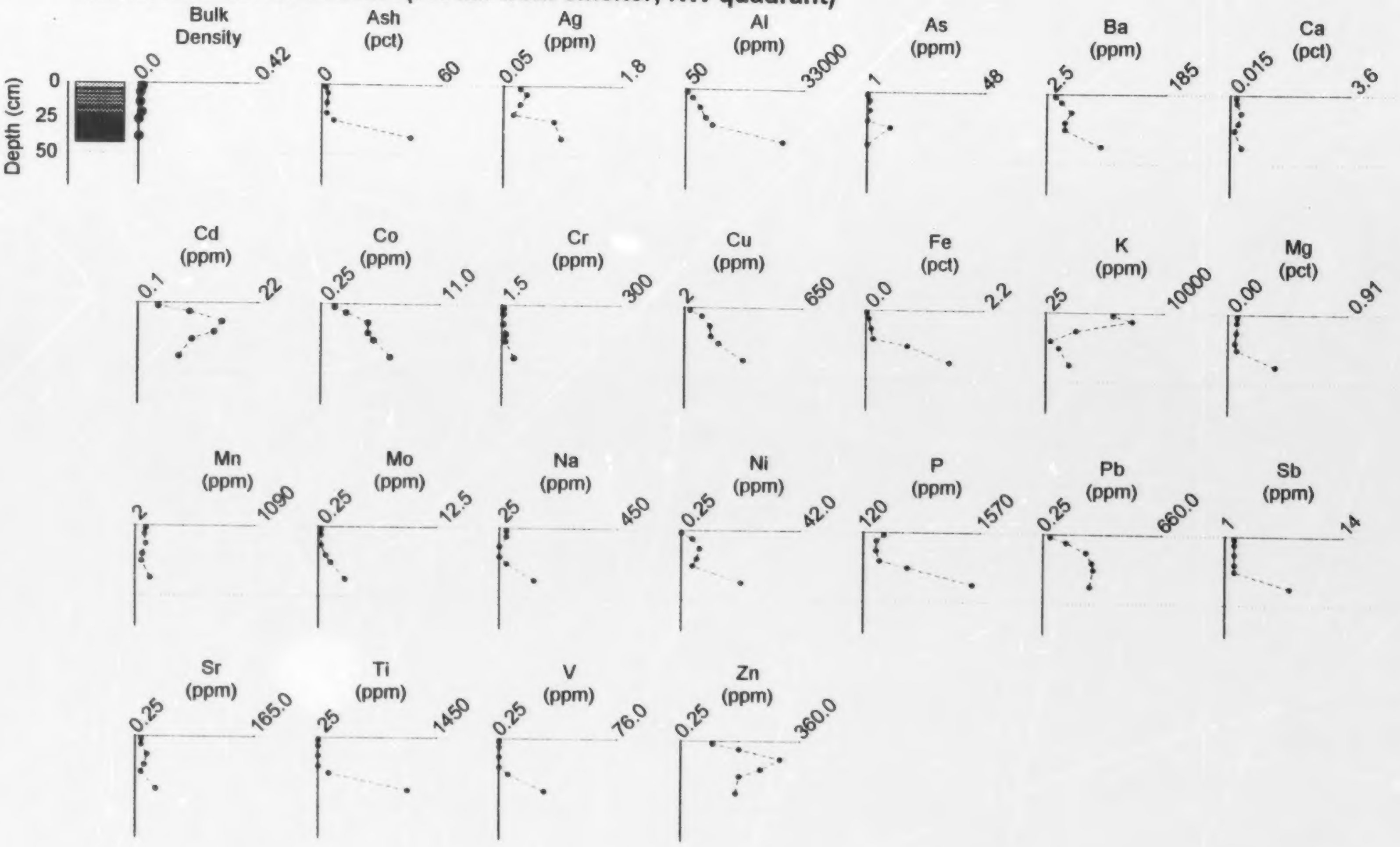
Flat Peatland Site 3534 (8.6 km from smelter, W quadrant)



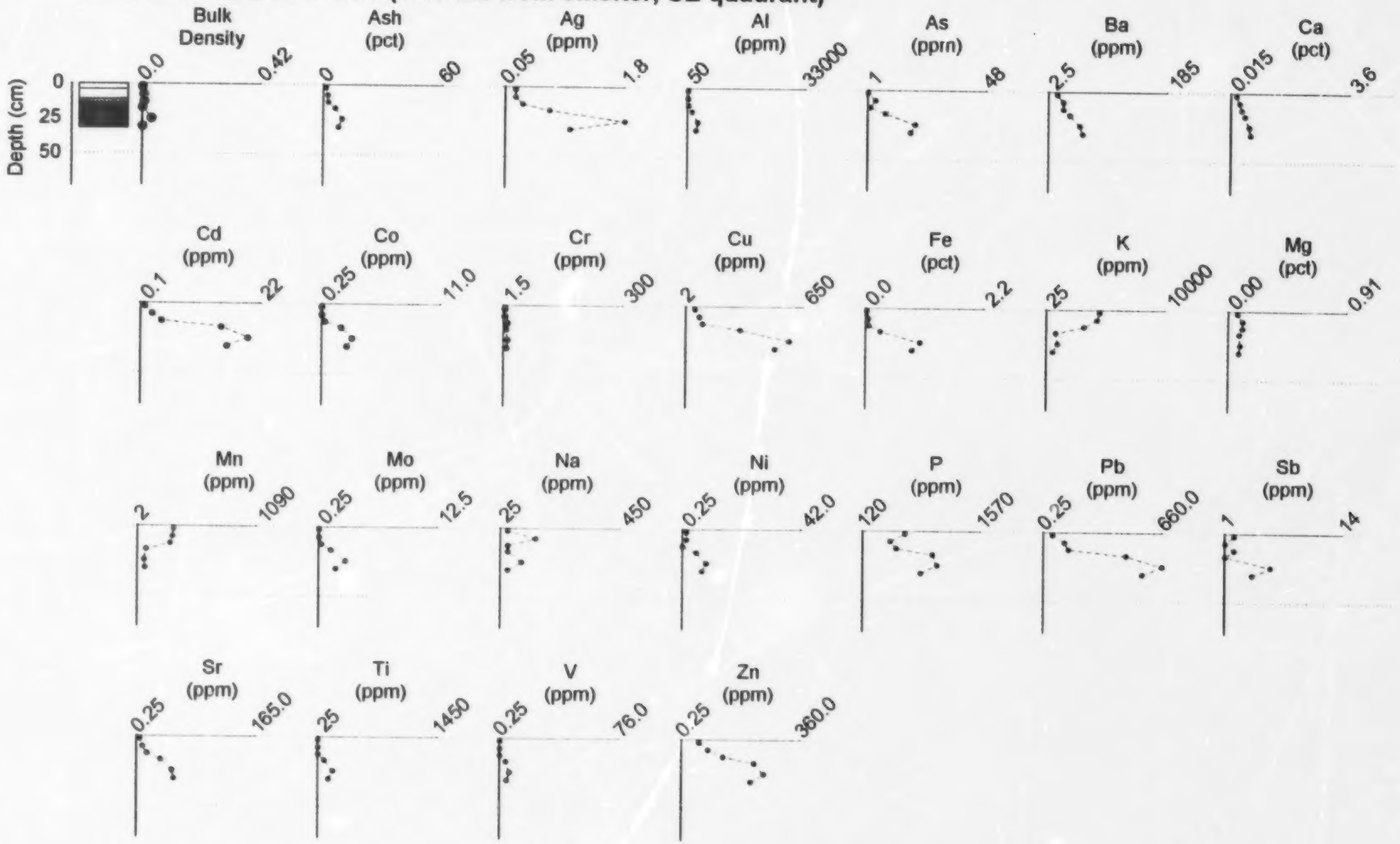
Hummock Peat Site 3536 (7.1 km from smelter, NW quadrant)



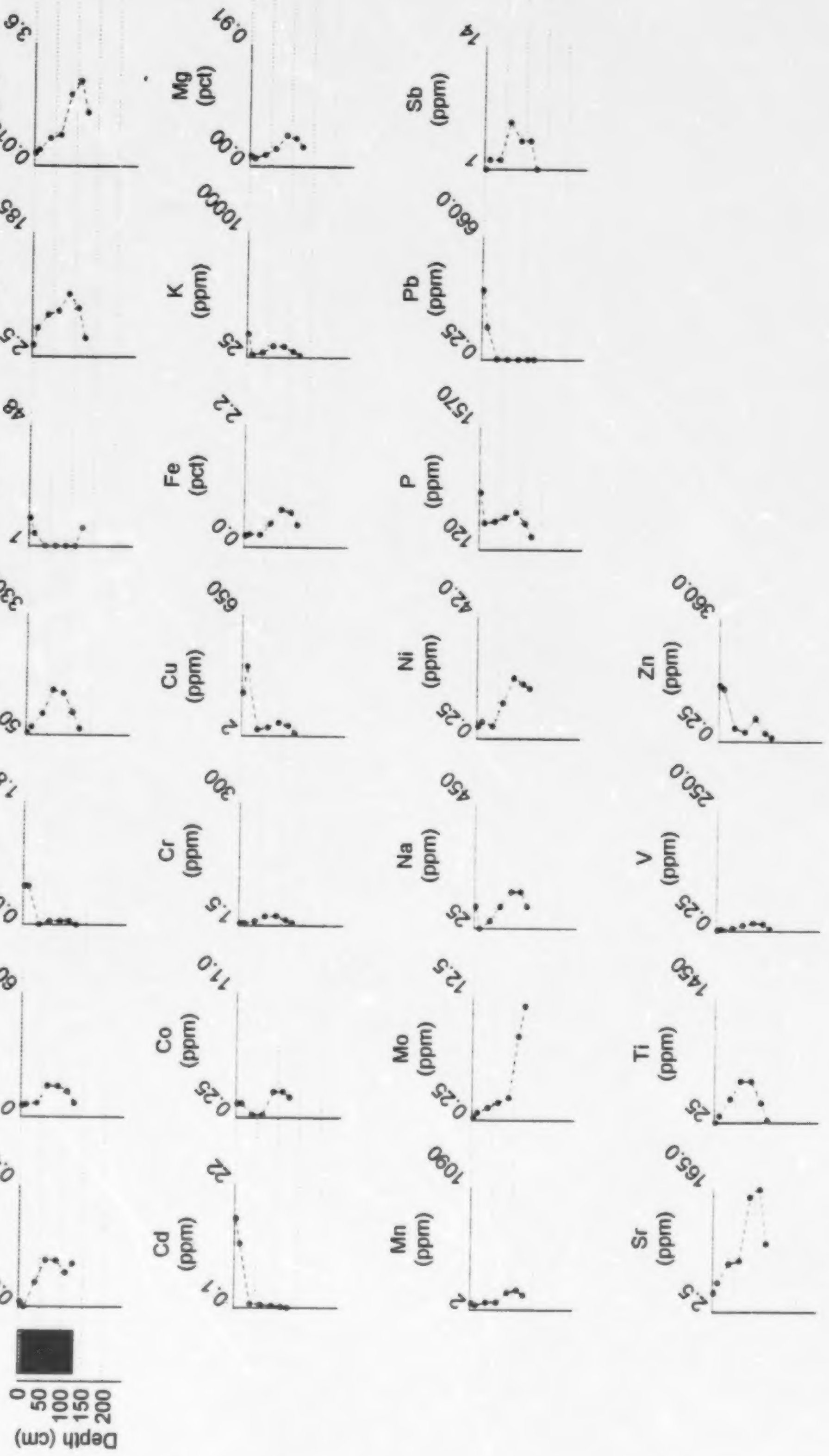
Hummock Peat Site 3536A (7.1 km from smelter, NW quadrant)



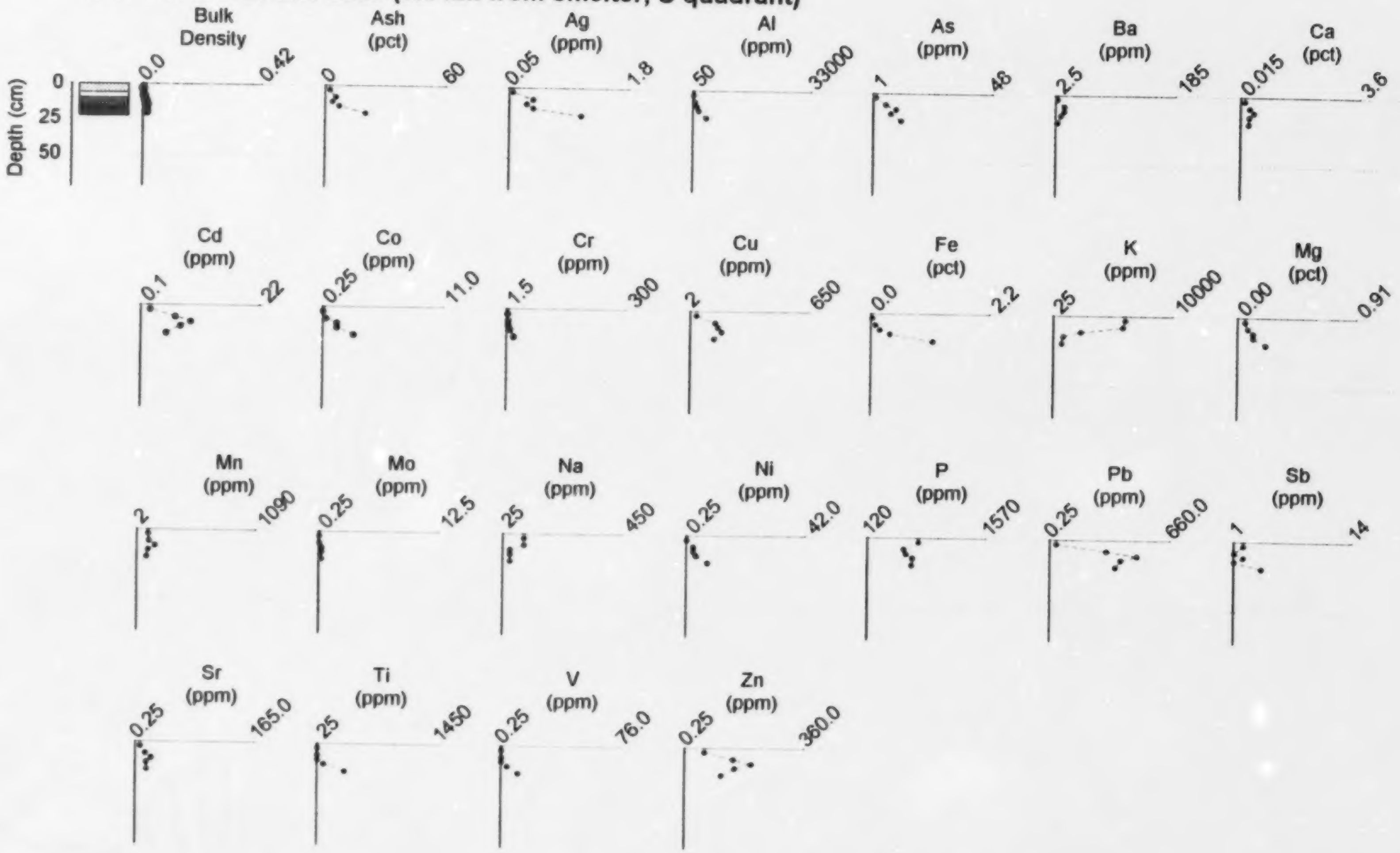
Hummock Peat Site 3537 (11.9 km from smelter, SE quadrant)



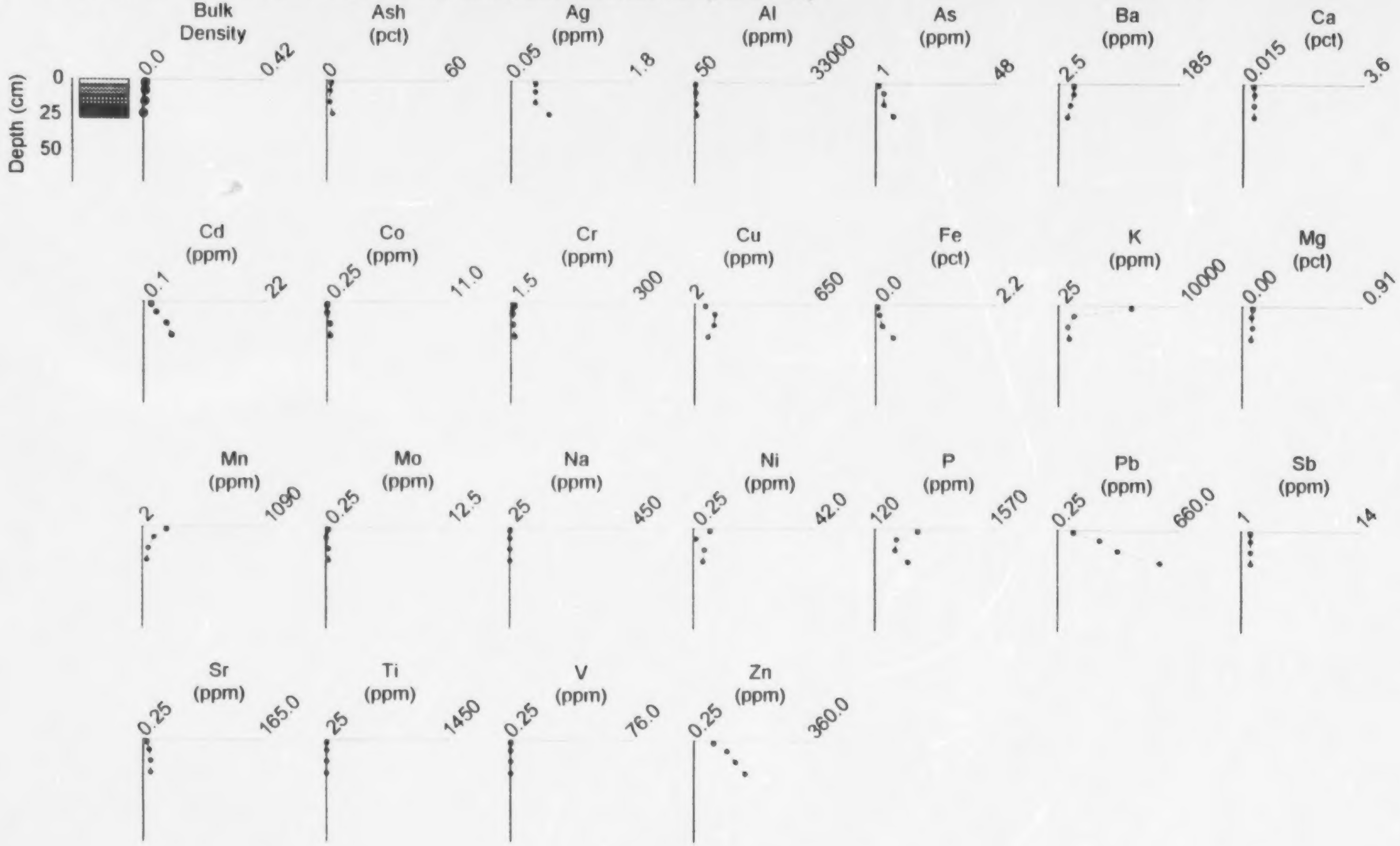
Flat Peatland Site 3537 (11.9 km from smelter, SE quadrant)



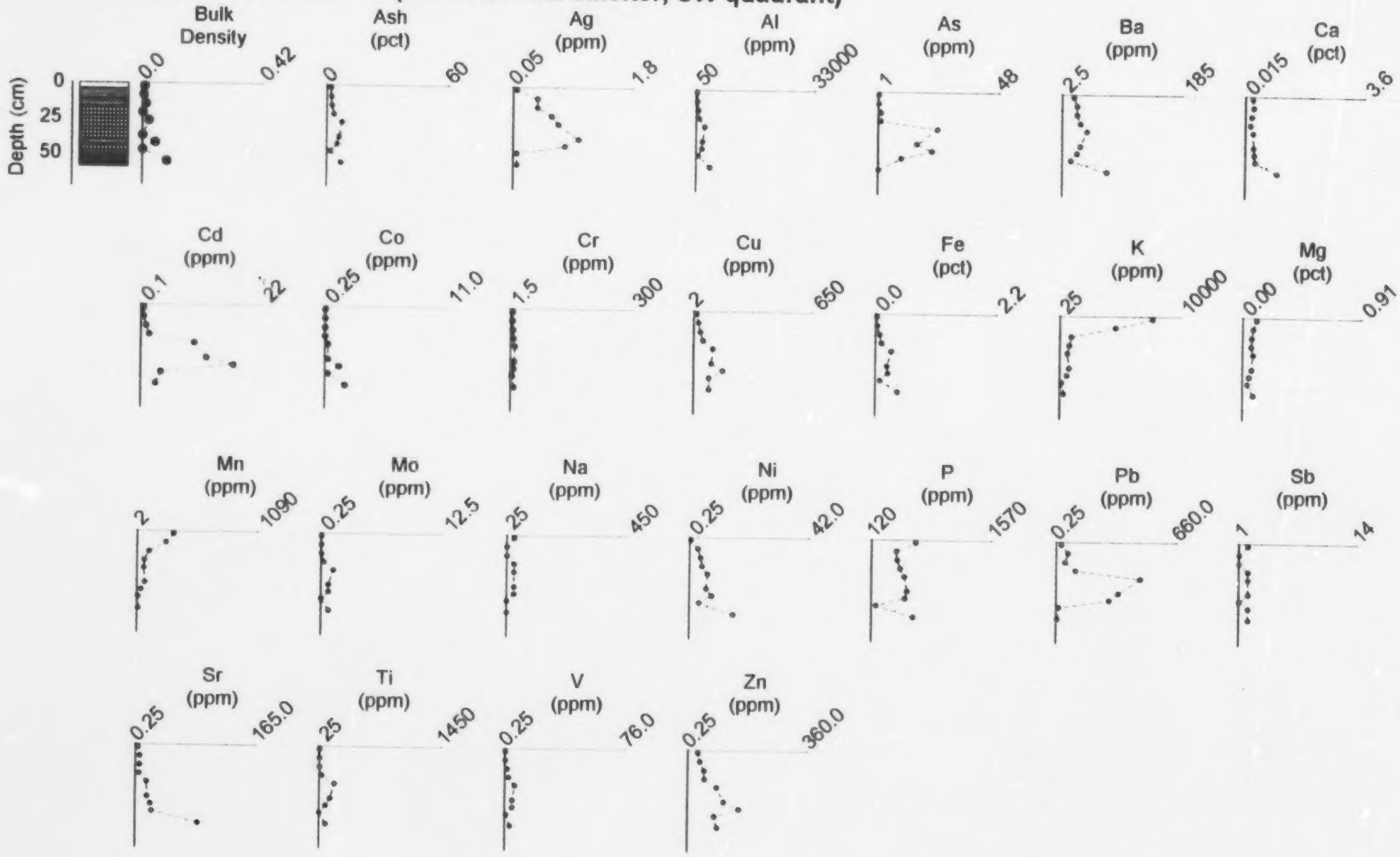
Hummock Peat Site 3538 (9.6 km from smelter, S quadrant)



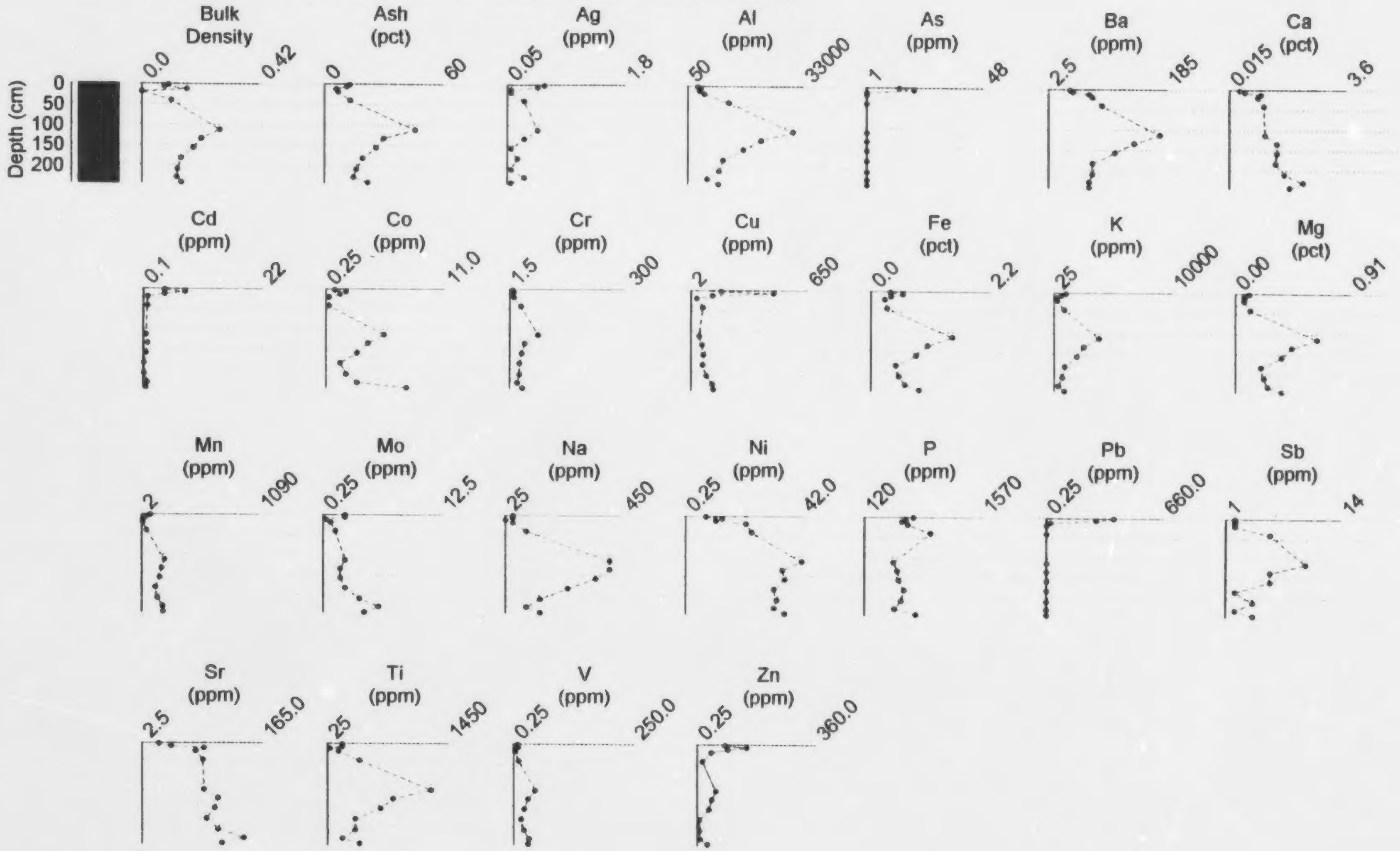
Hummock Peat Site 3539 (10.4 km from smelter, S quadrant)



Hummock Peat Site 3540 (11.6 km from smelter, SW quadrant)



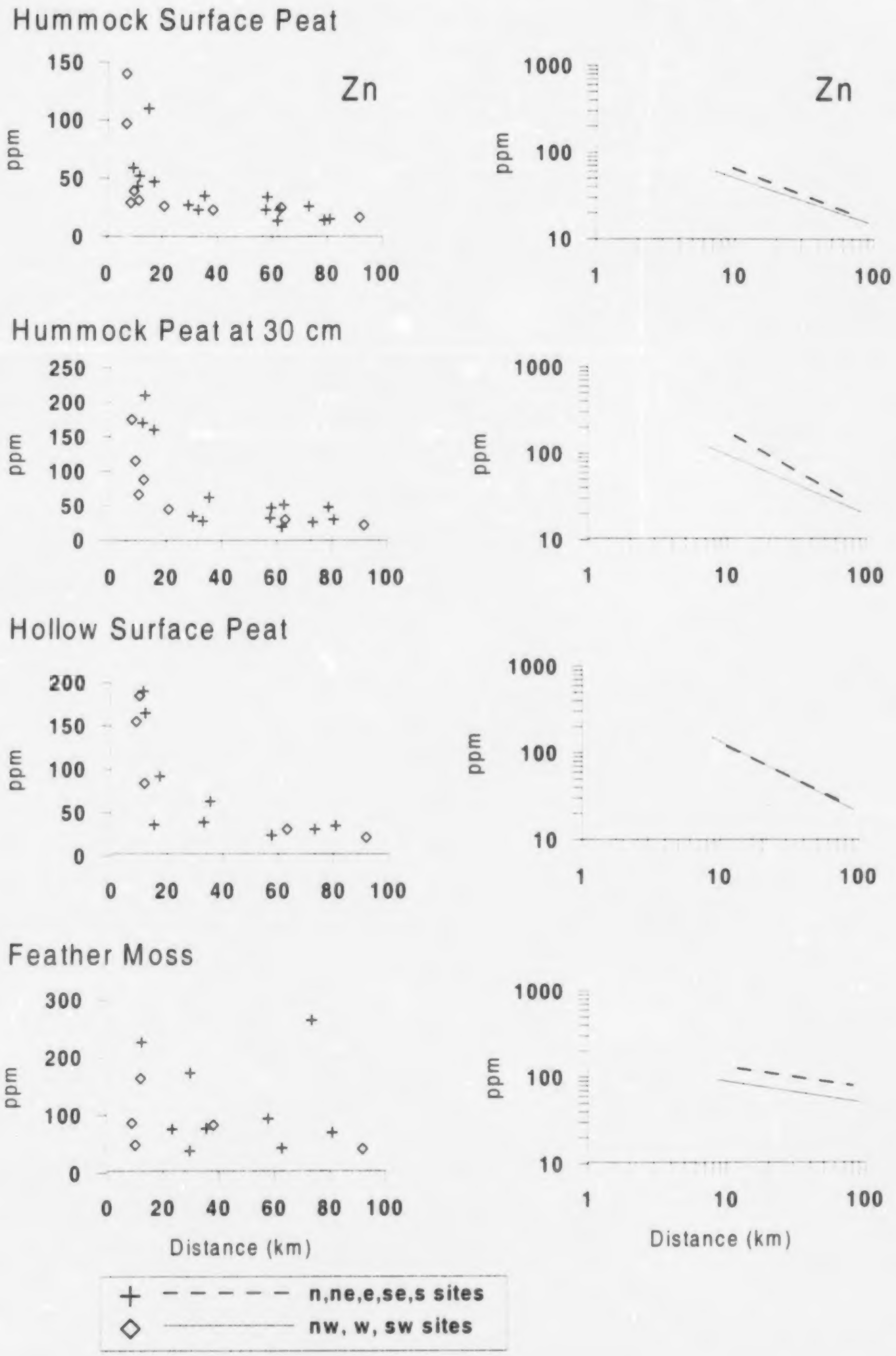
Flat Peatland Site 3540 (11.6 km from smelter, SW quadrant)

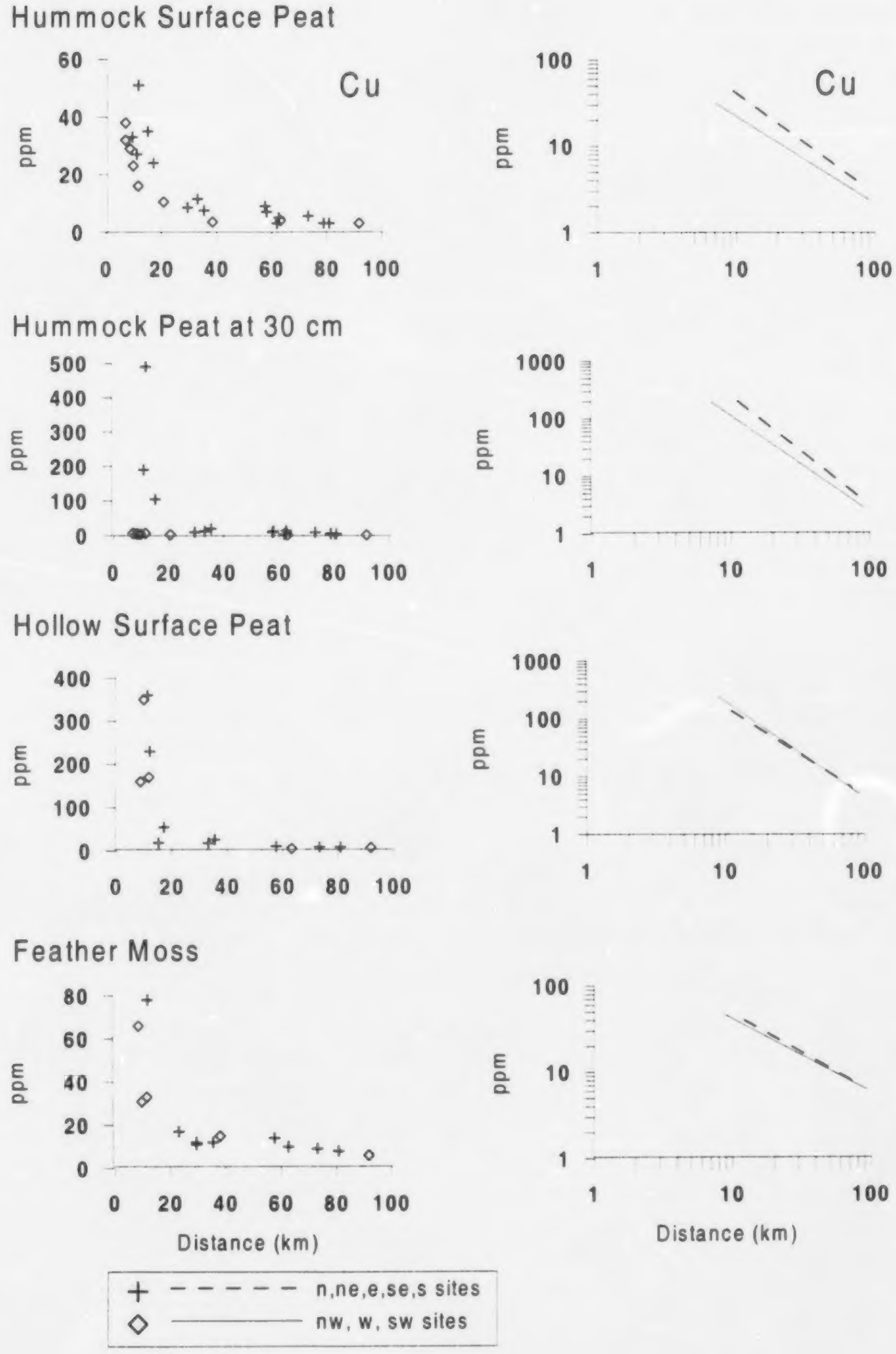


APPENDIX I

Distribution of Smelter-Related and Other Elements in Peat from Selected Horizons in Peatlands in Dominant and Non-Dominant Wind Sectors

Dominant = n, ne, e, se, s
Non-dominant = nw,w,sw


Hummock Surface Peat
Zn
Zn
ppm
150
100
50
0
0 20 40 60 80 100
1000
100
10
1 10 100
Hummock Peat at 30 cm
250
200
150
100
50
0
Hollow Surface Peat
200
150
100
50
0
Feather Moss
300
200
100
0
Distance (km)
Distance (km)
+ - - - - - n,ne,e,se,s sites
◇ ——— nw, w, sw sites

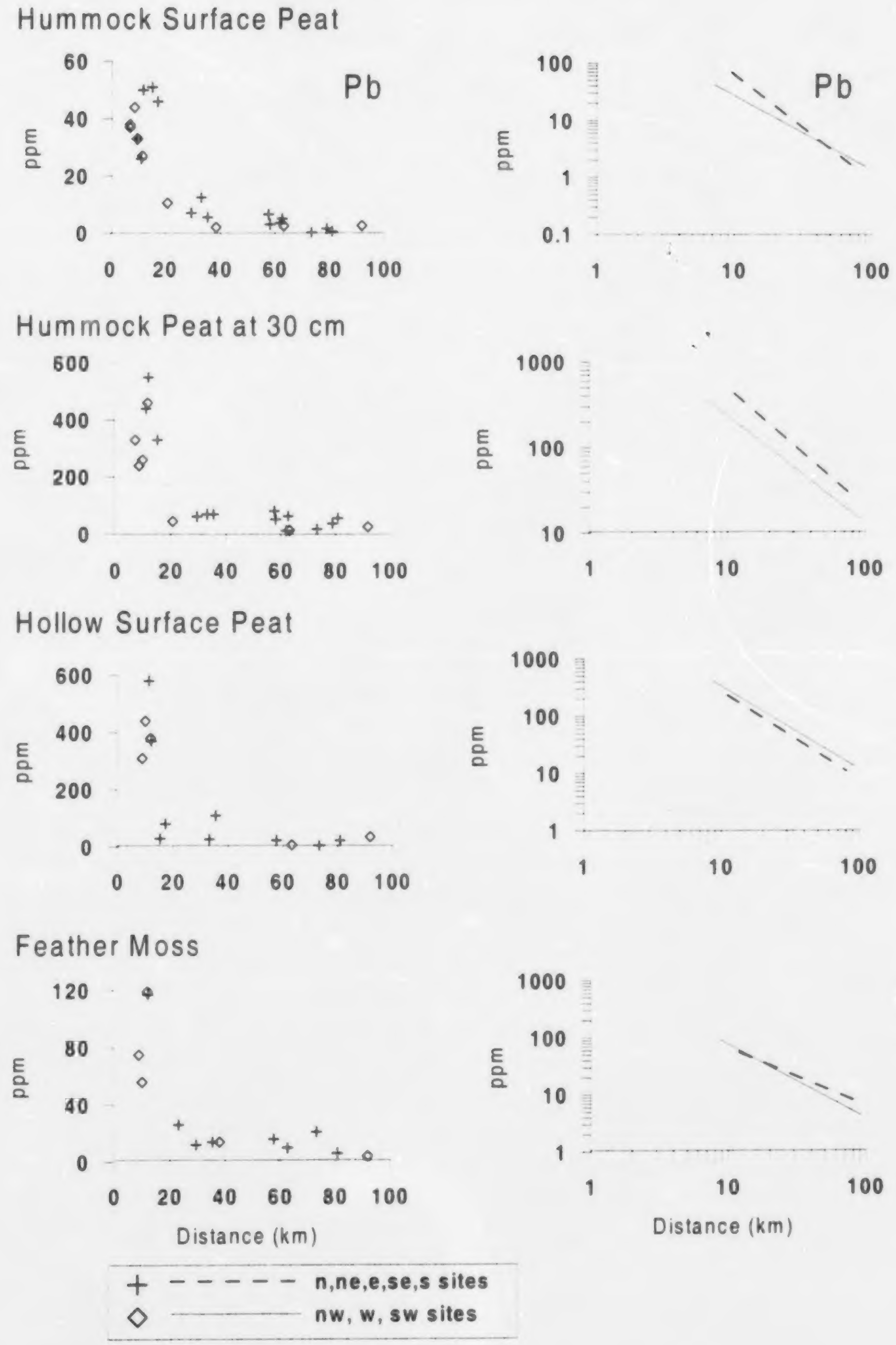


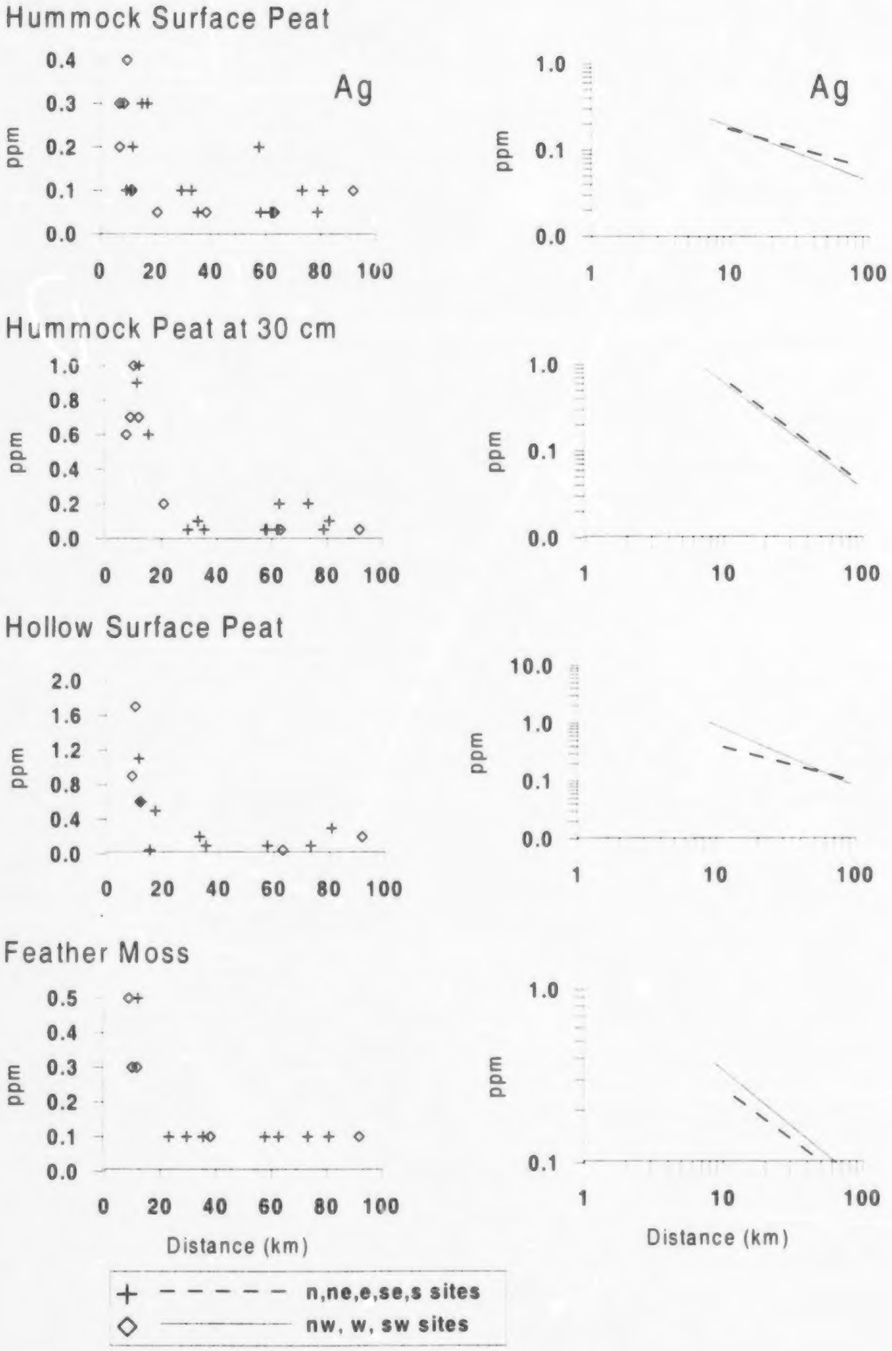
Hummock Surface Peat

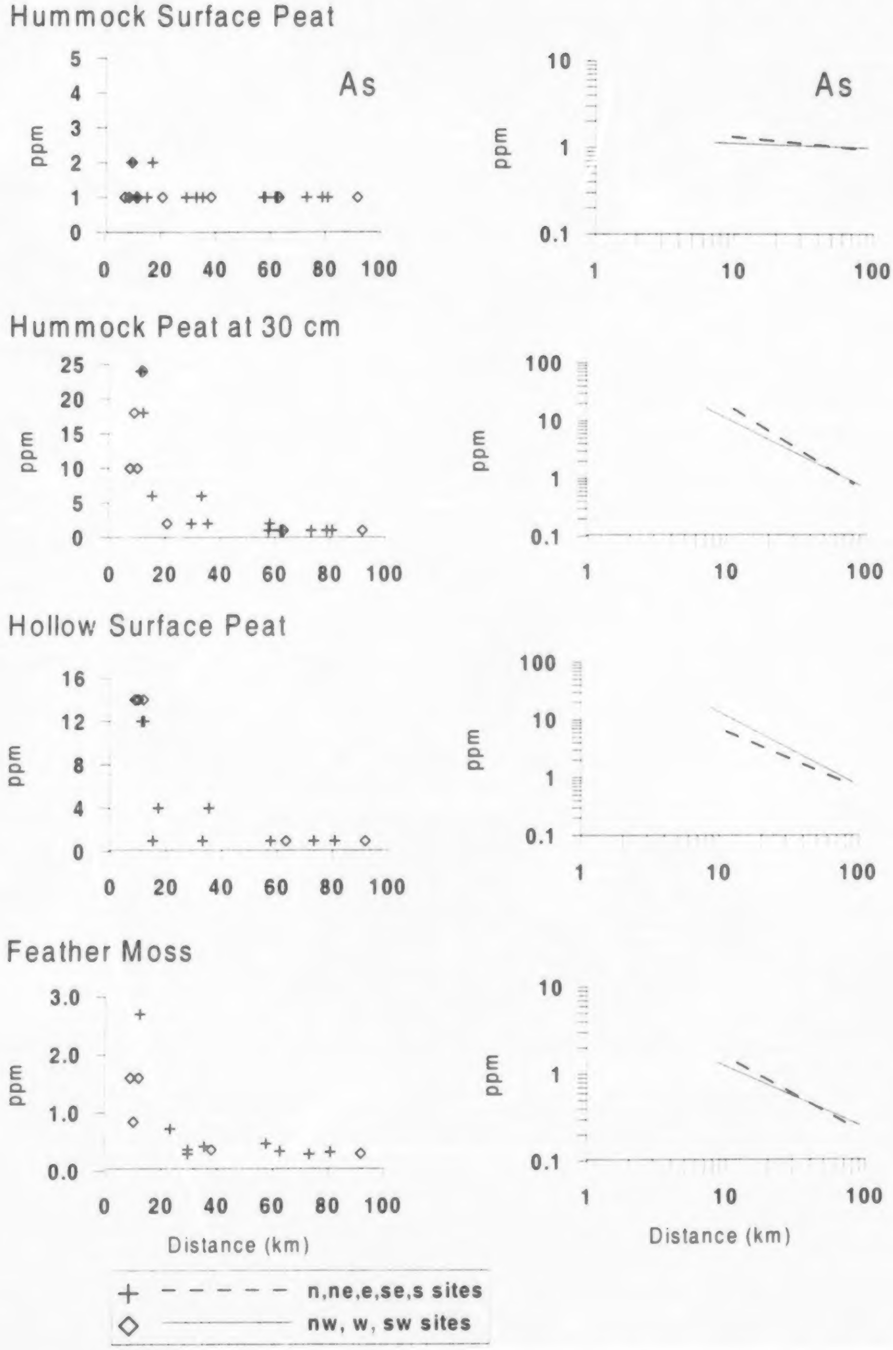
Hummock Peat at 30 cm

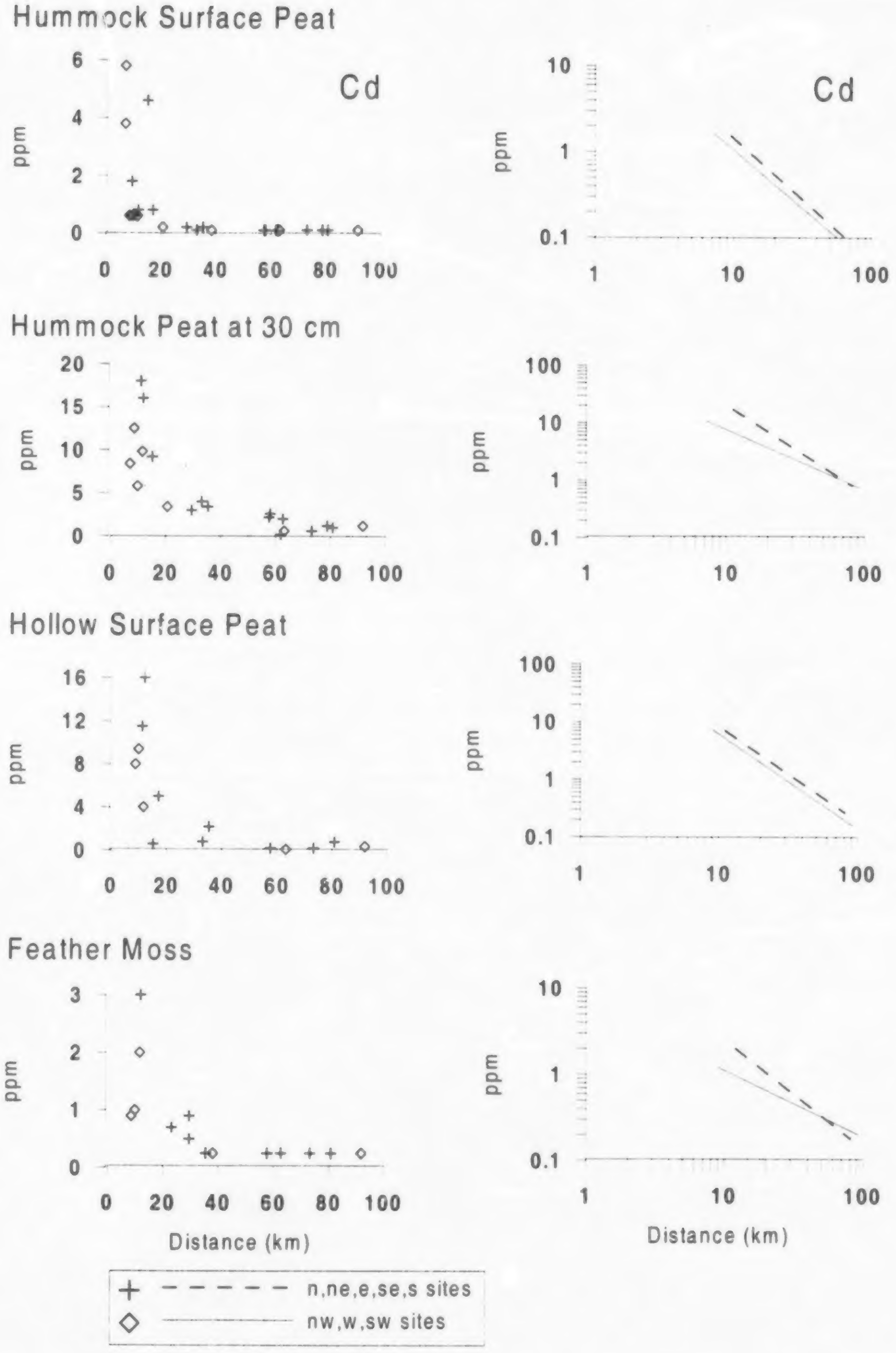
Hollow Surface Peat

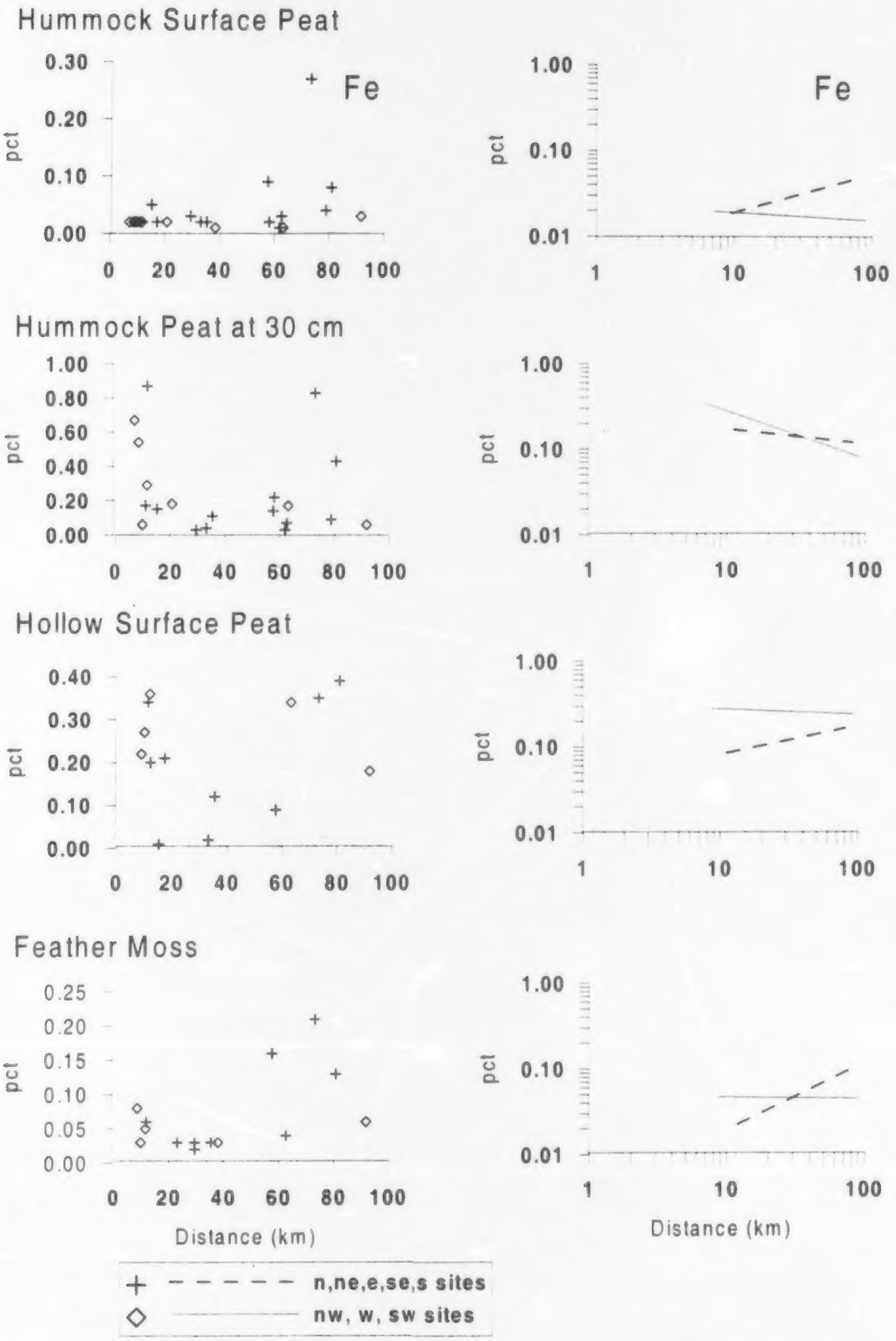
Feather Moss


Hummock Surface Peat
Pb
ppm
60
40
20
0
0
20
40
60
80
100
Pb
ppm
100
10
1
0.1
1
10
100
Hummock Peat at 30 cm
ppm
600
400
200
0
0
20
40
60
80
100
ppm
1000
100
10
1
10
100
Hollow Surface Peat
ppm
600
400
200
0
0
20
40
60
80
100
ppm
1000
100
10
1
1
10
100
Feather Moss
ppm
120
80
40
0
0
20
40
60
80
100
Distance (km)
ppm
1000
100
10
1
1
10
100
Distance (km)
+ - - - - - n,ne,e,se,s sites
◇ ——— nw, w, sw sites


Hummock Surface Peat
Ag
Ag
Hummock Peat at 30 cm
Hollow Surface Peat
Feather Moss
ppm
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.8
1.0
1.2
1.6
2.0
10.0
0
20
40
60
80
100
1
10
Distance (km)
+ - - - - - n,ne,e,se,s sites
◇ ——— nw, w, sw sites


Hummock Surface Peat
As
ppm
5
4
3
2
1
0
0
20
40
60
80
100
As
ppm
10
1
0.1
1
10
100
Hummock Peat at 30 cm
ppm
25
20
15
10
5
0
0
20
40
60
80
100
ppm
100
10
1
0.1
1
10
100
Hollow Surface Peat
ppm
16
12
8
4
0
0
20
40
60
80
100
ppm
100
10
1
0.1
1
10
100
Feather Moss
ppm
3.0
2.0
1.0
0.0
0
20
40
60
80
100
Distance (km)
ppm
10
1
0.1
1
10
100
Distance (km)
n,ne,e,se,s sites
nw, w, sw sites


Hummock Surface Peat
Cd
ppm
6
4
2
0
0 20 40 60 80 100
10
1
0.1
1 10 100
Cd
Hummock Peat at 30 cm
20
15
10
5
0
100
10
1
0.1
Hollow Surface Peat
16
12
8
4
0
Feather Moss
3
2
1
0
Distance (km)
n,ne,e,se,s sites
nw,w,sw sites


Hummock Surface Peat
Fe
Fe
Hummock Peat at 30 cm
Hollow Surface Peat
Feather Moss
pct
0.30
0.20
0.10
0.00
1.00
0.80
0.60
0.40
0.40
0.30
0.25
0.20
0.15
0.10
0.05
0.01
0
20
40
60
80
100
1
10
Distance (km)
n,ne,e,se,s sites
nw, w, sw sites

Best Fit Trend Line Equations and Coefficients of Determination for Selected Elements

Element	Sample	Equation - n,ne,e,se,s sites* (frequent wind directions)	R^2	Count	Equation - nw,w,sw sites* (less frequent wind directions)	R^2	Count
Cu	Hummock Surface Peat	$\ln(y) = -1.17 \ln(x) + 6.41$	0.89	15	$\ln(y) = -1.01 \ln(x) + 5.43$	0.95	9
	Hummock Peat at 30 cm	$\ln(y) = -1.90 \ln(x) + 9.87$	0.85	13	$\ln(y) = -1.67 \ln(x) + 8.55$	0.95	7
	Hollow Surface Peat	$\ln(y) = -1.53 \ln(x) + 8.59$	0.74	9	$\ln(y) = -1.67 \ln(x) + 9.14$	0.94	5
	Feather Moss	$\ln(y) = -0.91 \ln(x) + 5.96$	0.70	9	$\ln(y) = -0.85 \ln(x) + 5.69$	0.92	5
Pb	Hummock Surface Peat	$\ln(y) = -1.86 \ln(x) + 8.43$	0.77	15	$\ln(y) = -1.30 \ln(x) + 6.30$	0.92	9
	Hummock Peat at 30 cm	$\ln(y) = -1.39 \ln(x) + 9.42$	0.76	13	$\ln(y) = -1.25 \ln(x) + 8.36$	0.84	7
	Hollow Surface Peat	$\ln(y) = -1.54 \ln(x) + 9.16$	0.64	9	$\ln(y) = -1.46 \ln(x) + 9.18$	0.81	5
	Feather Moss	$\ln(y) = -1.02 \ln(x) + 6.55$	0.58	9	$\ln(y) = --1.30 \ln(x) +7.35$	0.93	5
Zn	Hummock Surface Peat	$\ln(y) = -0.62 \ln(x) + 5.59$	0.68	15	$\ln(y) = -0.54 \ln(x) + 5.16$	0.56	9
	Hummock Peat at 30 cm	$\ln(y) = -0.91 \ln(x) + 7.26$	0.71	13	$\ln(y) = -0.69 \ln(x) + 6.14$	0.89	7
	Hollow Surface Peat	$\ln(y) = -0.77 \ln(x) + 6.64$	0.64	9	$\ln(y) = -0.82 \ln(x) + 6.78$	0.94	5
	Feather Moss	$\ln(y) = -0.24 \ln(x) + 5.44$	0.05	9	$\ln(y) = -0.25 \ln(x) + 5.08$	0.23	5
Ag	Hummock Surface Peat	$\ln(y) = -0.45 \ln(x) - 0.71$	0.30	15	$\ln(y) = -0.63 \ln(x) - 0.22$	0.54	9
	Hummock Peat at 30 cm	$\ln(y) = -1.21 \ln(x) + 2.40$	0.56	13	$\ln(y) = -1.22 \ln(x) + 2.32$	0..93	7
	Hollow Surface Peat	$\ln(y) = -0.63 \ln(x) + 0.57$	0.23	9	$\ln(y) = -1.05 \ln(x) + 2.34$	0.73	5
	Feather Moss	$\ln(y) = -0.60 \ln(x) + 0.06$	0.49	9	$\ln(y) = -0.66 \ln(x) +4.33$	0.87	5
As	Hummock Surface Peat	$\ln(y) = -0.16 \ln(x) + 0.64$	0.25	15	$\ln(y) = -0.05 \ln(x) + 0.24$	0.05	9
	Hummock Peat at 30 cm	$\ln(y) = -1.50 \ln(x) + 6.40$	0.89	13	$\ln(y) = -1.20 \ln(x) + 5.16$	0.81	7
	Hollow Surface Peat	$\ln(y) = -1.03 \ln(x) + 4.33$	0.54	9	$\ln(y) = -1.27 \ln(x) + 5.52$	0.98	5
	Feather Moss	$\ln(y) = -0.89 \ln(x) + 2.52$	0.62	9	$\ln(y) = -0.71 \ln(x) +1.84$	0.84	5
Cd	Hummock Surface Peat	$\ln(y) = -1.44 \ln(x) + 3.68$	0.77	15	$\ln(y) = -1.37 \ln(x) + 3.20$	0.77	9
	Hummock Peat at 30 cm	$\ln(y) = -1.54 \ln(x) + 6.53$	0.75	13	$\ln(y) = -1.05 \ln(x) + 4.45$	0.87	7
	Hollow Surface Peat	$\ln(y) = -1.65 \ln(x) + 5.94$	0.63	9	$\ln(y) = -1.66 \ln(x) + 5.65$	0.86	5
	Feather Moss	$\ln(y) = -1.26 \ln(x) + 3.81$	0.83	9	$\ln(y) = -0.76 \ln(x) + 1.87$	0.74	5
Ni	Hummock Surface Peat	$\ln(y) = 0.62 \ln(x) - 1.71$	0.19	15	$\ln(y) = -0.13 \ln(x) + 0.15$	0.01	9
	Hummock Peat at 30 cm	$\ln(y) = 0.28 \ln(x) + 0.40$	0.08	13	$\ln(y) = -0.65 \ln(x) + 3.14$	0.91	7
	Hollow Surface Peat	$\ln(y) = 0.09 \ln(x) + 0.64$	0.00	9	$\ln(y) = -0.64 \ln(x) + 3.78$	0.37	5
	Feather Moss	$\ln(y) = 0.27 \ln(x) + 0.13$	0.13	9	$\ln(y) = 0.09 \ln(x) + 0.58$	0.03	5
Fe	Hummock Surface Peat	$\ln(y) = 0.45 \ln(x) - 4.99$	0.17	15	$\ln(y) = -0.09 \ln(x) + 3.74$	0.06	9
	Hummock Peat at 30 cm	$\ln(y) = -0.17 \ln(x) - 1.36$	0.01	13	$\ln(y) = -0.56 \ln(x) + 0.01$	0.35	7
	Hollow Surface Peat	$\ln(y) = 0.33 \ln(x) - 3.26$	0.04	9	$\ln(y) = -0.06 \ln(x) - 1.13$	0.06	5
	Feather Moss	$\ln(y) = 0.78 \ln(x) - 5.73$	0.33	9	$\ln(y) = -0.02 \ln(x) - 3.02$	0.00	5
Sb	Feather Moss	$\ln(y) = -1.35 \ln(x) + 3.08$	0.86	9	$\ln(y) = -1.23 \ln(x) + 2.17$	0.95	5
Au	Feather Moss	$\ln(y) = -1.52 \ln(x) + 7.56$	0.46	9	$\ln(y) = -0.78 \ln(x) + 4.74$	0.81	5

* Data grouped into two sets, based on wind direction frequencies and location of sample sites relative to the smelter.

GEOLOGICAL SURVEY OF CANADA
OPEN FILE 3882

Geochemical Composition of Hummock and Hollow Peat and Feather Moss in the Vicinity of the Horne Smelter, Rouyn-Noranda, Quebec

INTRODUCT ION

In 1997 Geological Survey of Canada initiated research on heavy metal concentrations in peatlands in the vicinity of the Horne smelter at Rouyn-Noranda, Quebec. This work was carried out as part of the "Point Sources" Sub-programme in the Metals of the Environment (MITE) programme. The purpose of the Point Sources initiative was to determine and compare the physical and geochemical record of particulate smelter emissions in surficial media (till, soils, lake sediments, snow, lake waters, peat, and tree rings) and to evaluate the impact of anthropogenic loading on these natural systems.

The peatland project in Rouyn-Noranda was undertaken in two phases. The first phase, started in 1997, consisted of a sampling survey of 41 peatlands located within a 100-km radius of the smelter. At each peatland site, hummock peat samples were collected and, where possible, cores were collected through peat to mineral sediment in the adjacent flat part of the peatland, also called the hollow. Peat samples from 24 of the 41 sites were analyzed for selected trace, minor, and major elements, their content of organic matter and bulk density. Also at 15 of the 24 sites, surface feather moss (*Pleurozium schreberi*), a useful bioindicator of heavy metals, was collected and analyzed for the same suite of elements. The second phase, ongoing since 1999, has involved detailed work on the distribution and character of metals in hummock peat from four sites located 10,12, 38 and 130 km away from the smelter. In this report, geochemical and other data for peat,

underlying mineral sediments, and feather moss from the 24 "first phase" peatlands are reported.

METHODOLOGY

Site selection - Sample sites were selected, based on peatland distribution, dominant wind directions, and road access. In the 1997 survey, samples were collected at 41 sites (97KFA3500 to 97KFA3540) but samples from only 24 of the 41 sites were analyzed (Fig. 1). The data for samples from these 24 sites form the basis of this report. Sites ranged from 7 to 92 km from the smelter (Appendix B). At each site, the peatland setting, vegetation, and location were described (Appendix B). The majority of sites were ombrotrophic (bog) or weakly minerotrophic peatlands (poor fens) (Zoltai, 1988b). The surface vegetation was predominantly *Sphagnum spp*. And ericaceous shrubs (*Kalmia angustifolia* (sheep laurel), *K. polifolia* (bog laurel), *Ledum groenlandicum* (Labrador tea), *Andromeda glaucophylla* (glaucous bog rosemary), *Chamaedaphne calyculata* (leather leaf).

Hummock sampling - At each site, the tallest available Sphagnum hummock covered with the fewest number of shrubby plants was selected for sampling. From top to bottom in the hummock, samples were collected at about 2 to 4 cm intervals with stainless steel clippers, and, where possible, the volume of each sample was estimated. Peat characteristics of the hummock sequence were described in the field (Appendix C). Measurements of pH were taken at or near the hummock base. In the data lists, the hummock sequences are identified with the peatland site number plus an "h" (e.g. 97KFA3500h).

Hollow sampling - At sites where there were peat accumulations of 30 cm or more in thickness in the flat part of the peatland (hollow) adjacent to the hummock, a second set of samples was collected. From the surface to a depth of approximately 30 cm, block samples were hand-cut and, where possible, sample volumes were estimated. Below 30 cm, peat was collected to mineral sediment using a 4.5 cm diameter stainless steel

macaulay corer. The hollow sequences were described in the field (Appendix C). At the time of collection the hollow core was sub-sectioned into 10 to 50 cm long segments for analysis. Mineral sediments from the base of the core were also sampled. The hollow sequences are identified with the peatland site number plus an "f" (e.g. 97KFA3500f).

Feather moss sampling - At 14 sites, feather moss (*Pleurozium schreberi*) (Fig. 5) was collected from the hollow, as close to the sample hummock as possible. Using methodology described by Rasumussen (1994), 2 to 4 cm long segments were clipped from the ends of the moss branches with stainless steel clippers.

Laboratory Processing - Peat hummock and hollow samples were assigned a laboratory number, coded using a Munsell soil colour chart (Munsell Color Company, 1971), weighed, and put in the oven to dry at 37degrees C. The dried samples were then reweighed and the moisture contents, based on both wet and dry weights, and bulk densities calculated (Appendix D).

From the poorly decomposed surface hummock samples, two and, where there was sufficient material, three splits (> 1gm) of the original dried sample were extracted. From one of these splits, Sphagnum fragments were hand-picked and the resulting sub-sample was identified with the laboratory number plus "s". The remaining one or two splits were both identified with the laboratory number plus "w". From the samples of more decomposed peat collected at greater depths in the peat hummock, two splits (>1 gm) of the original dried sample were extracted and both identified with the laboratory number plus "w". From the hollow samples, two splits of the original dried samples were extracted and both identified with the laboratory number plus "m". The mineral sediments samples were separated from the basal hollow core segment and identified with the site number. The feather moss samples were divided into two splits, identified with the site number plus "fm".

Samples analysis –. The <0.063 mm fractions of the mineral sediment samples were separated by sieving, treated with aqua regia, and analyzed for selected elements using ICP-AES methods (Appendix E). Peat samples were digested with nitric-perchloric acid digestion prior to ICP-AES analysis. Peat samples were also subjected to loss-on-ignition analysis at 500 degrees C (Appendix D). This analytical work on the peat and mineral sediment samples was undertaken at ALS Chemex Ltd., Vancouver.

One split of the feather moss samples was analyzed for selected elements using INAA methods (Appendix E).. The other was ashed and the residue treated with an aqua regia digestion, and analyzed using ICP-AES techniques methods. Analytical work on the feather moss samples was undertaken at Activation Laboratories, Ancaster, Ontario.

EXPLANATION OF THE OPEN FILE REPORT AND DIGITAL RELEASE

The Open File 3882 publication comprises a report of 37 pages (plus a pocket item) with discussions of compositional data for peat, feather moss, and sediment data. Also included are 9 Appendices, consisting of (i) information on peatland forms and vegetation (Appendix A); (ii) peatland site descriptions (Appendix B); (iii) field descriptions of hummock and hollow sequences (Appendix C); (iv) peat sample descriptions, including data for loss-on-ignition and bulk density measurements (Appendix D); (iv) geochemical data for peat, feather moss, and mineral sediment samples (Appendix E); (v) summary statistical data (Appendix F); (vi) geochemical data for duplicate samples (Appendix G); (vii) plots showing geochemical profiles, with depth, of peat in hummocks and hollows in 24 peatlands (Appendix H); and (vii) plots showing the distribution of selected elements in three peat horizons and feather moss in peatlands in dominant and non-dominant wind sectors.

The digital release that accompanies Open File 3882 consists of the following files:

site.txt; site.xls – peatland site locations and descriptions of setting and surface vegetation (see Appendix B below).

fielddes.txt; fielddes.xls – field descriptions of hummock and hollow sequences (see Appendix C below).

sampdes.txt; sampdes.xls – descriptions of peat samples from hummock and hollow sequences, includes Munsell colours and data for bulk density and loss-on-ignition measurements.

peat_icp.txt; peat_icp.xls – peat geochemical data (ICP-AES) for samples collected from hummock and and hollow sequences in 24 peatlands (see Appendix E below)

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fm_icp.txt; fm_inaa.txt; fm_inaa.xls; fm_inaa.xls: geochemical data (ICP-AES and INAA) for feather moss samples from 14 peatlands (see Appendix E explanation).

sed_icp.txt; sed_icp.xls: geochemical data (ICP-AES) for samples of mineral sediments underlying the hollow peat sequences (see Appendix E explanation).

site.txt; site.xls ROUYN-NORANDA PEATLAND SITE DESCRIPTIONS

Site Number	Site Number (data generated for 24 sites numbered between 97KFA3500 and 97KFA3540)
Sector	Position of the site with respect to the compass direction from the smelter
Distance (km)	Distance from smelter in kilometres
Lat (deg)	Latitude (degrees)
Long (deg)	Longitude (degrees)
Location Description	Position of site with respect to the nearest town
Hummock Samples	Samples hand cut from hummock, with length in centimetres (yes or no)
Flat Peatland Samples	Surface and core samples from hollow or flat part of peatland, with length in centimetres (yes (with sampling depth) or no)
pH Water	pH of water at or near hummock base
Site Description	Description of peatland setting, vegetation, and underlying materials and date sampled.

fielddes.txt; fielddes.xls	**FIELD DESCRIPTIONS OF PEAT IN HUMMOCK AND HOLLOW SEQUENCES**
Site Number	Site Number (data generated for 24 sites numbered between 97KFA3500 and 97KFA3540)
Location	Hummock - *Sphagnum* peat taking the form of a raised mound Flat - peat in sequence from hollow (flat part of peatland) adjacent to the hummock
Depth (cm)	Depth from the surface in centimetres
From	Depth at top of sample or core interval in centimetres
To	Depth at base of sample or core interval in centimetres
Sequence description	Description of peat materials with depth

sampdes.txt;
sampdes.xls

PEAT SAMPLE DESCRIPTIONS

Site Number/Sample Type	Site number with modifier "h" or "f"; "h" indicates sequence from hummock; "f" indicates sequence from flat part of peatland (hollow) adjacent to hummock.
Laboratory Number	Sample number assigned in the laboratory. Hummock sample numbers are designated with "w" or "s". Those samples with "w" are a split of the original sample and are composed of all hummock materials, except for coarse twigs and woody roots which were removed. Those samples with "s" were prepared from another split of the original hummock sample and are composed of hand-picked *Sphagnum* fragments only. Samples from the hollow sequence are designated with "m" and are composed of all peat materials, except for coarse twigs and woody roots.
Sector	Position of the site relative to the compass direction from the smelter
Depth (cm)	Depth from the surface in centimetres
From	Depth at top of sample or core interval in centimetres
To	Depth at base of sample or core interval in centimetres
Moisture % (Wet Wt.)	Per cent water content, based on wet weight of sample
Moisture % (Dry Wt.)	Per cent water content, based on dry weight of sample
Bulk Den (gm/cm3)	Bulk density determination (gm/cm3)
Ash %	Ash remaining in sample after ignition at 500 degrees C.
Munsell Colour	Munsell colour of sample
Munsell or Other Colour Desc	Description of Munsell colour or observed colour

peat_icp.txt; peat_icp.xls
fm_icp.txt; fm_icp.xls
fm_inaa.txt; fm_inaa.xls
sed_icp.txt; sed_icp.xls

GEOCHEMICAL DATA FOR PEAT, FEATHER MOSS AND SEDIMENT SAMPLES

Site Number/Sample Type	Site number with modifier "h" or "f"; "h" indicates sequence from hummock; "f" indicates sequence from flat part of peatland (hollow) adjacent to hummock.
Laboratory Number	Sample number assigned in the laboratory. Hummock sample numbers are designated with "w" or "s". Those samples with "w" are a split of the original sample and are composed of all hummock materials, except for coarse twigs and woody roots that were removed. Those samples with "s" were prepared from another split of the original hummock sample and are composed of hand-picked Sphagnum fragments only. Samples from the hollow sequence are designated with "f" and are composed of all peat materials, except for coarse twigs and woody roots.
Sector	Position of the site relative to the compass direction from the smelter
Dist (km)	Distance from the smelter in kilometres
Depth (cm)	Depth from the surface in centimetres
From	Depth at top of sample or core interval in centimetres
To	Depth at base of sample or core interval in centimetres

peat_icp.txt; peat_icp.xls **ICP-AES DATA**
fm_icp.txt; fm_icp.xls
sed_icp.txt; sed_icp.xls

Element	Unit	Element Name	Lower Detection Limit	Upper Detection Limit
Ag	ppm	Silver	0.10	100
Al	ppm	Aluminium	50	100000
As	ppm	Arsenic	2	10000
Ba	ppm	Barium	5	10000
Ca	pct	Calcium	0.005	10
Cd	ppm	Cadmium	0.2	100
Co	ppm	Cobalt	0.50	10000
Cr	ppm	Chromium	0.5	10000
Cu	ppm	Copper	0.50	10000
Fe	pct	Iron	0.005	10
K	pct	Potassium	0.005	1.00
Mg	pct	Magnesium	0.005	10
Mn	ppm	Manganese	1	10000
Mo	ppm	Molybdenum	0.50	10000
Na	ppm	Sodium	50	50000
Ni	ppm	Nickel	0.50	10000
P	ppm	Phosphorus	5	10000
Pb	ppm	Lead	0.50	10000
Sb	ppm	Antimony	2	10000
Sr	ppm	Strontium	0.50	10000
Ti	ppm	Titanium	0.005	10
V	ppm	Vanadium	0.5	10000
Zn	ppm	Zinc	0.50	10000

fm_inaa.txt; fm_inaa.xls INAA data

Element	Unit	Element Name	Lower Detection Limit
Ag	ppm	Silver	0.2
As	ppm	Arsenic	0.5
Au	ppb	Gold	0.1

Ba	ppm	Barium	5
Br	ppm	Bromine	1
Ca	pct	Calcium	0.2
Ce	ppm	Cerium	3
Co	ppm	Cobalt	1
Cr	ppm	Chromium	1
Cs	ppm	Cesium	0.5
Fe	pct	Iron	0.05
Hf	ppm	Hafnium	0.5
Hg	ppm	Mercury	1
K	pct	Potassium	0.05
La	ppm	Lanthium	0.1
Lu	ppm	Lutelium	0.05
Mo	ppm	Molybdenum	0.005
Na	ppm	Sodium	10
Sb	ppm	Antimony	0.1
Sc	ppm	Scandium	0.1
Sm	ppm	Samarium	0.1
Sr	ppm	Strontium	10
Zn	ppm	Zinc	50